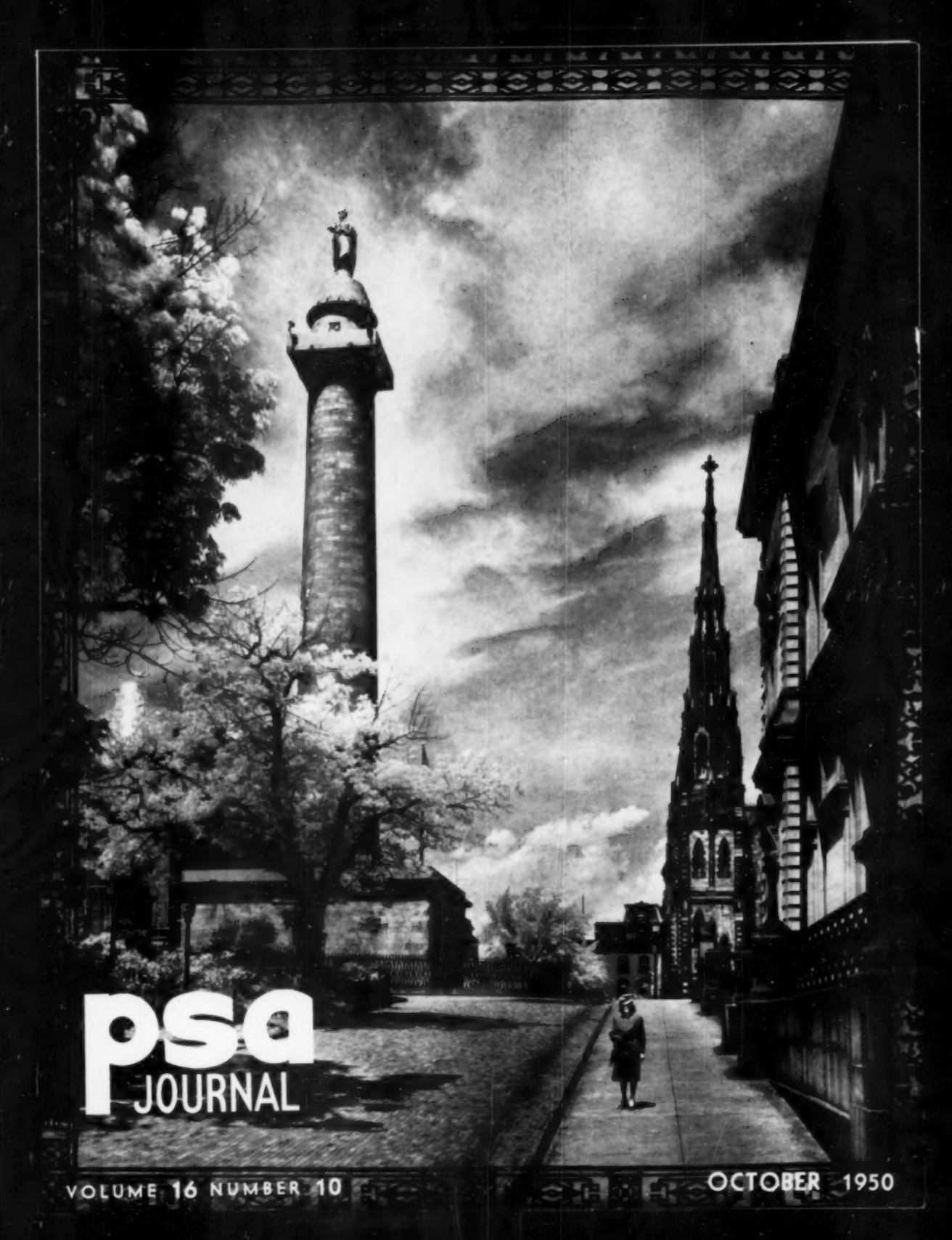

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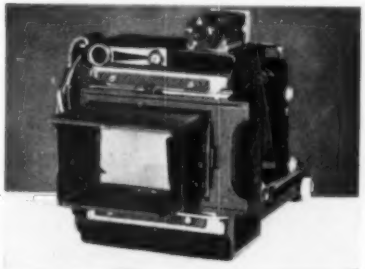

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BALTIMORE . . .

JUST ABOUT now several thousand PSA members who have never attended a PSA Convention are pondering the advisability of investing October 18 to 21 next at Baltimore, Md. No such questions perplex members who have ever attended before. If they can find the time and the financing, they'll be there!

PSA CONVENTIONS are so enjoyable that even if held in a far less photogenic and hospitable city than Baltimore, with no formal program, and members left to their own devices, they would return home with memories of a wonderful, productive affair. Basically assemblies of democratic and accomplished people, PSA Conventions actually comprise hundreds of small, impromptu conventions organized by garrulous amateurs whenever and wherever they find a vacant corner and minute.

ALL IT takes to start one of these informal programs is for somebody to see somebody, regardless of prior acquaintanceship, and make a remark or ask a question about photography. Particularly because of PSA's happy elimination of protocol and big-shottery, these informal gatherings are likely to be as productive as the formal programs. Consequently, the amateur with a yen to learn and a reliable memory, or notebook, can extend his photographic knowledge remarkably and pleasantly.

THE BALTIMORE PSA Convention promises an exceedingly helpful program from which photography — and PSA — greatly should benefit. Any member who fears to attend because he knows few other amateurs, or who is inclined to be timid in the presence of the great, can pack his bag and leave his fears behind. The combination of Baltimore and PSA assures him of four of the most friendly, enjoyable, and photographically-productive days of his life.—V.H.S.

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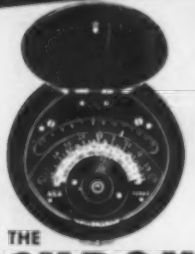

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THE PICA RULE

By Fred Quellmalz, Jr., Hon. PSA

In the language of the printer, a pica is a rule of measure. Likewise, these informal chats with the Editor, which will be published from time to time as space permits and the spirit moves, will be a measure of reader reaction and editorial comment.

We often question the value of some of the material that appears in print. As a matter of fact, as an unknown editor in LaPlata (Md.) has written: "Sometimes the dearth of news, the pressure of getting to press on time and the long tedious hours required to compose and get into type information which our readers can consume at a glance and probably already know anyway, makes us wonder if it's worthwhile to go through with the same irksome routine again next month."

All of which leads up to the question of why we have devoted so much space during the past six months to discussions on salons and exhibitions. There are two main reasons — the first reader interest (more letters and comments have been received from members on this topic than all others combined); and secondly, to serve as background material for one of the really big features of the PSA Baltimore Convention — the panel discussion by Adolf Fassbender, Hon. FPSA and John R. Hogan, FPSA, versus Bruce Downes and Jacob Deschin, APSA, on "Pictorialism, Modernism, Futurism." Regardless of your interests in photography, this discussion alone will make a trip to Baltimore more than worthwhile. The views of the two factions have been rather well summed up in the Journal by Cecil Atwater and Donald Hamilton.

Incidentally, if you do attend the Baltimore Convention, won't you look me up and tell me what we can do to make the Journal more useful to you as an individual? We are extremely anxious to get as many suggestions and as much constructive criticism as possible.

PAA Convention

In August the Photographers' Association of America held its 70th Anniversary Convention in Chicago. PSAers were much in evidence and among those appearing on the program were Maurice Tabard, Harry Shigeta, Adolf Fassbender, Pops Whitesell, Roy Hirshburg, Paul L. Gittings, the writer, etc.

We were especially proud when Adolf Fassbender, Hon. FPSA, was called to the speakers' table at the Annual Banquet to receive the highest honor the PAA can confer — the Honorary Master of Photography. This was a tribute not only to a master craftsman but to the PSA as well, since Mr. Fassbender's name has been linked with the Society's since the early days.

An invitational exhibit by P. H. Oelman, FPSA, was given the place of honor in the picture exhibition, and it was flanked by the Star Exhibitors Show of the PSA Pictorial Division. Few professionals left the show without a new respect for the work being turned out by the amateur.

The new president of the PAA is Lawrence J. Inman, of Long Beach, California.

PSA Journal Annual

The 1951 PSA Journal Annual will be published in December of this year and will take the place of the December Journal.

Among the many features will be several illustrations in full color — the first time the Journal has been able to use four-color reproductions since 1945. There will be a portfolio of prints by Ansel Adams with an appraisal of his work by Jack Wright.

Among the authors who will be represented are Kay Simmon on "Children at Work," Dr. C. E. K. Mees, Hon. FPSA, on the life and work of George Eastman, P. H. Oelman, FPSA, on photographing the nude, Mrs. Helen C. Manzer, APSA, on "Colorful Mexico Beckons the Photographer," Leslie J. Mahoney on "The Land of Photographic Opportunity," Bernard G. Silberstein, APSA, on photographing Peru, J. Dudley Johnston on pictorialism, J. L. Tupper and C. D. Reid on "Lens-Aperture Marking Systems," D. Ward Pease, APSA, on photographic books, and many others.

We are still in need of several how-to-do-it features, articles on photo-journalism and press photography, and a number of outstanding illustrations. F.Q.Jr.

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GENERAL ELECTRIC

psa JOURNAL — Letters to the Editor

Luton, Beds., England

TO THE EDITOR:

I should like to take this opportunity to tell you how much I appreciate the PSA JOURNAL. As an American on a two year assignment it provides a much needed touch with home, and I am certainly glad to have continued my PSA membership while over here. HAROLD G. WARNER

Urbana Illinois

TO THE EDITOR:

Photography often pays dividends where it is least expected. I have just returned from a vacation at Jasper National Park, Alberta, Canada, where I attended the Convention of the Pi Beta Phi Fraternity, a congregation of 560 attractive young women from 97 chapters in the USA and Canada.

Acting as official photographer and photographic consultant for 560 girls equipped with 520 cameras of all makes and descriptions, I spent a greater part of my vacation giving photographic advice, answering fool questions, and fixing jammed cameras.

The Pi Phi Special from Chicago, occupied by 250 girls and Paul Busey, gave me a splendid opportunity to assist in making out camera custom declarations for every girl on the train.

During the Convention we set up a salon of pictures taken by the members, using "Bill" Robinson, conductor of the *U. S. Camera* Tours during the former two years, and Harry Rowed, prominent Canadian photographer, as judges. Bill is head of the photographic Department of the Canadian National Railway, and Harry is the only photographer to my knowledge who ever took a picture of 560 girls and Paul G. Busey seated on the side of a hill with his camera on the roof of a hotel, without benefit of flash or panaraming, and satisfied all the women.

Also got some good pictures of Louis F Bucher and Harold Lloyd, the movie star Lloyd is a Stereo enthusiast.

PAUL G. BUSEY

Bergenfield, N. J.

TO THE EDITOR:

This is something new for me, to be writing to an Editor, but I just can't help myself. After having seen Mr. Hamilton's illustrations in his "Case against the Salons," I can well understand why he is against them.

I don't claim to be an authority on the judging of prints never having sent to a salon, and I have never had the privilege of viewing one. The closest I have ever been, is the illustrations in the magazines and though there were a lot that did not appeal to me, the majority of them did.

I wish you would say to any other critics of the salons, that if they can not put up a better argument than the one we have seen, to please keep quiet, so we who are in the middle will not have to read the stuff they write, but can't back up.

Keep up the good work, I think your magazine is tops. GEORGE J. MUNZ

Falls Church, Va.

TO THE EDITOR:

The growing criticism of our salons, which now amounts to an anti-salon movement, can no longer be ignored. All of the important photo magazines have devoted space to this so-called problem and thereby added fuel to the fire.

As so often happens very little is said in a constructive way. The chief targets of the attack are the judges and the exhibitors, both accused of being unimaginative reactionaries, to say the least.

Whether these blasts are justified or not I am inclined to doubt. There are always those willing to tear down but have little better to offer. Then, too, there are those who have been unsuccessful in the salons and are seeking to place the blame for their unsung (and unhung) pictures on others.

If the status quo is to be changed I believe these changes should come in the salon rules and practices. Then, perhaps the criticisms leveled at the judges and exhibitors would take care of themselves.

The general rules for salons, set up by PSA and followed by most of the better salons in this country today, have not kept pace with changing salon conditions. The interest in salons has greatly increased in the past few years and will probably continue to increase. There are more salons every year and far more exhibitors.

With some reservations, I would like to offer the basis for a new and entirely different system of salon practices. It is not without faults but I think it would answer most of the criticism leveled at the salons today. More important, it would revitalize the salons in a way that our present system can never do.

The broad pattern for this plan is taken from the competitive sports world where "open" and "invitation" tournaments are established practices.

Under this new plan a city planning a salon could announce that it's salon would be either "open" or by "invitation" or both.

An open salon would be open to all as salons now are. Judging procedures would not be changed. However, there would be one important change in the pictures placed before the judges for their consideration. Although any photographer could exhibit he would have this one restriction placed upon his pictures: *Any photograph that had been hung more than an arbitrary number of times in other salons could not be placed in open competition.*

The question of how many times a print could be hung before it became ineligible would be a matter for PSA to decide. My

(Turn to page 558)

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DRIVE OF CHAMPIONS

A Membership Suggestion

Please find enclosed No. 17 membership from Chattanooga. Mr. Lester Cohn operates one of the finest camera shops in the South, and for years has been a leading booster for anything photographic in Chattanooga.

Expect to reach the 20 mark very shortly as several others have indicated a desire to join our new group of PSA members.

I find that many prospects are of the opinion that to become a member of PSA they must be a top-notch photographer. The above Mr. Cohn was one. To illustrate the portfolio idea I am using 5 or 6 prints (along with the remarks) which have completed a portfolio circuit. This is a sure-fire reason for many prospects to want to join PSA upon viewing the prints and remarks.

HERBERT JACKSON
Signal Mt., Tennessee

A Letter

Los Caobos, Caracas
Venezuela, South America

TO PRES. MULDER:

Regarding your invitation to tell about my experiences in selling PSA memberships, there is not much I can say, in fact nothing extraordinary. I simply visit those photographers I consider as potential members, and during our talk I show them one of the most interesting issues of PSA JOURNAL, explaining to them that it is published by the Photographic Society of America, but stressing the fact that it is an international association for serious photographers, that they can submit their best works for publication in PSA JOURNAL, etc. Therefore most of them consider it an honor to belong to PSA.

This idea coupled to the other advantages of PSA membership is sufficient to convince them and so they become members. Later, by word of mouth, propaganda from a member to his friends, I generally get new memberships. Of course, there is nothing particular in this manner of getting memberships which has become almost a routine to me.

Sometimes when visiting a busy photographer, I leave in his office a sample copy of PSA JOURNAL and return in a few days to see his reaction. When obtaining the membership of a well-known photographer, I usually find it possible to have his picture published in the local newspaper, together with a note informing the public that our colleague "so-and-so" has been elected a member of the Photographic Society of America in recognition of his artistic or technical work in photography, or something like this, which never fails to draw attention in favor of PSA activities.

FRANK J. DELIMA

This Month's Tip

PSA JOURNAL is one of our biggest selling points to new members. When you go out selling PSA, why not stick a few issues under your arm to show to your prospects? Point out the strong points and don't forget to emphasize that any member may raise questions on photographic technique or practice for answer in the "How To" column. This is only one of the many worthwhile features. Your own perusal of the magazine will help you find others.

For additional sample copies of any issue, drop a postcard to PSA Headquarters in Philadelphia.

Drive of Champions Tally

As of August 15, 1950

State	*Name*	*Points*
District No. 1		
Maine	None	0
New Hampshire	None	0
Vermont	None	0
Massachusetts	Ralph A. Hamman	1
Connecticut	Edward Hutchinson	1
	Paul Spetry	20*
Rhode Island	None	0
District No. 2		
New York	Bernard M. Acosta	9*
	Perry Atkinson	1
	Edward L. Bailey	1
	B. Erle Buckley	2
	Willard H. Carr	½
	Earl R. Clark	1
	John H. Dessauer	1
	William J. Dewhirst	2*
	Robert F. Edgerton	1
	Mrs. Franke Fassbender	5*
	Richard W. Henn	1
	Norman Lipton	1
	Rev. Boyd A. Little	6*
	Hugo Maugeri	1
	Arthur S. Mawhinney	1
	Herbert McDonough	1
	Walter S. Meyers	1
	Lowell E. Mueller	1
	John G. Mulder	26**
	J. Stanley Nixon	1
	H. Paschel	1
	H. C. Radon	1
	E. G. Sargent	½
	V. H. Scales	2½
	Silas M. Thronson	2
	Charles H. Tipple	1
	Ruth E. Tremor	1
	Dr. E. P. Wightman	20*
New Jersey	Roy J. Bohlen	1
	H. R. Caler	1
	H. D. Sheldon	8½*
District No. 3		
Pennsylvania	Wilson R. Browne	1
	Philip Cass	31½**
	Dr. Francis A. Faught	1
	Nelson Hutchinson	5*
	George F. Johnson	2
	Richard R. Koch	12*
	F. Quellmalz, Jr.	41½*
Delaware	A. K. Pfister	1
Maryland	Mrs. Caryl R. Firth	2
	Tom Firth	4
	Oliver C. Shipley	1
	E. V. Wenzell	2
D. of Columbia	None	0
Virginia	CC of Richmond	2
	Dr. J. O. Fitzgerald	1
	T. P. Holt	8*
	Old Dominion CC	1
West Virginia	Mrs. Louise A. Geisel	1
District No. 4		
Ohio	A. Millard Armstrong	2
	R. C. Hakanson	1
	E. J. Hobbs	1
	Edward B. Noel	3
	P. H. Oelman	1
	Sidney Thomas	2
	Doris M. Weber	21*
Indiana	Robert L. McFerran	2
	Harvey P. Rockwell, Jr.	1
Kentucky	French Patterson	1
Michigan	J. Elwood Armstrong	4
	Earle W. Brown	6*
	Belle McMillen	1
	Harry Perry	1
District No. 5		
Tennessee	Miss Eugenia Buxton	6*
	Herbert Jackson	16*
	Allison V. Slagle	1
Georgia	C. F. Luce, Jr.	2
Florida	None	0
Alabama	H. Jack Jones	1
	Prescott V. Kelly	3½
Mississippi	J. M. Endres	3
North Carolina	None	0
South Carolina	None	0
District No. 6		
Louisiana	Wood Whitesell	5*
	A. E. Woolley, Jr.	2
Arkansas	Allan M. Thomas	1
Missouri	Stuart M. Chambers	40**
	W. E. Chase	1
Kansas	C. R. Ronnstedt	1
	Dan B. Rumpf	1
Texas	Samuel F. Davis	1
	Eugene C. Dowlne	1
	Paul L. Gittings	1
	Lloyd L. Gregory	1
	Dr. L. L. Handly	1
	C. J. Perry	1
	W. F. Reeves	1
	F. J. Schmidt	½
	CWO Frank I. Yates	6*
Oklahoma	Frank J. Heller	3
	John Long	1
District No. 7		
North Dakota	None	0
South Dakota	None	0
Nebraska	Sten T. Anderson	1
	Richard C. Knott	1
	Stanley D. Sohl	2
Illinois	Rus Arnold	2
	Dwight M. Chambers	1
	Mrs. Evelyn Chambers	2
	Dr. Edward Chips	5*
	Eldridge R. Christhilf	2
	Clifford B. Cox	1
	Frank Fenner Jr.	1
	Mrs. C. L. Fredrick	3½
	W. Howard Fredrick	2
	H. J. Johnson	6½*
	Robert M. Keith	1
	Russel Kriete	1
	Lou H. Leff	1
	Warren W. Lewis	2
	Mary Matsumara	1
	Jean Mowat	½
	Walter E. Parker	2
	J. H. Sammis	1
	Clara Schmitt	1
	Pearl E. Schwartz	2
	S. P. Wright	1
	Mabel Young	4
Iowa	Edith M. Royky	5*
	Waterloo Camera Club	1
Minnesota	Larry D. Hanson	15*
	Vim M. Judd	1
Wisconsin	Dr. Milton L. Kuhs	1
	Robert J. Lauer	2
	Ray Miess	3

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State	Name	Points
District No. 8		
Washington	Joe Marshall	2
Oregon	C. W. Getzendaner	4
Montana	Carlton L. Lingwall	1
Idaho	None	0
Wyoming	Dick Harris	1
District No. 9		
California	Dr. Werner Alexander	1
	A. Appelman	1
	K. V. Arntzen	2
	Esmond Arthur	1
	J. Philip Bandura	1
	John F. Barnes	1
	Karl A. Baumgartner	1
	Clyde L. Browning	1
	Moreland M. Deaderick	5*
	Ross Dobro	50*
	Milton Elliott	1
	John Forsythe, Jr.	1
	Harold Gorton	2
	Frederick L. Richards	1
	So. Cal. Counc. of Cl.	1
	So. Cal. Soc. ID	1
	H. A. Thornhill	1
	Charles L. Wilson	1
Nevada	None	0
Utah	None	0
Colorado	Roy E. Petersen	1
New Mexico	None	0
Arizona	None	0
District No. 10		
Alaska	Gilbert G. Whitehead	1
Hawaii	David A. Muramoto	2
	National Photo Co.	5
Canal Zone	None	0
Area No. 1		
Canada	William B. Bate	1½
	Dr. M. V. Chantler	½
	James A. McVie	1½
	Oliver W. R. Smith	1
	Sam Vogan	2½

Area No. 2		
Cuba	Angel DeMoya	4½
Brazil	Jose Rastelli	½
Costa Rica	Dr. Esteban A. DeVarona	7½*
Cuba	F. Figurredo	½
Mexico	Gordon C. Abbott	1
Puerto Rico	William C. Ihlefeld	½
Venezuela	Frank J. Delima	2
Area No. 3		
Europe	None	0

Area No. 4		
New Zealand	Harold A. Larsen	2
	Maj. Keith R. Mosheim	½
India	Dr. G. Thomas	1½
Hong Kong	Dr Ernest To	2
	Francis Wu	1

* Champion
** Not eligible for higher awards

NEW AIDS FOR GOOD PICTURE-MAKING

JACOB DESCHIN, APSA

New 4 x 5 and 5 x 7 Super Technika models of the famous Linhof press-type cameras, which are imported exclusively by Peerless Camera Stores, Inc., 138 East 44th Street, New York City, highlight the news in this field. Without lens, the price of the 4 x 5 is $249.50, of the 5 x 7, $100 more. The price includes a new long-base Multi-focus Rangefinder that couples to lenses of different focal lengths by means of interchangeable cams that rest on the camera bed. The longer base of the new rangefinder permits greater focusing accuracy and a working distance as close as one foot with some of the short-focus lenses. The 5 x 7 is sufficiently light in weight to be used hand-held, like the 4 x 5. A 4 x 5 reducing back for the 5 x 7 is available at $49.50.

Other features of the new models include an improved ground-glass focusing hood, which is now made entirely of leather, is self-erecting, self-closing, and hinged on one side so that it can be removed; a change in the position of the tilting control knobs that allow easier handling of film holders; replacement of the knurled-knob track lock with a lever. Quickly interchangeable focusing scales are provided to match the different lenses individually, and the distance indicator is a small magnifier to permit easier reading of the scale. A special shoe for the cable release is mounted at the focusing knob, thus allowing the photographer to snap the shutter immediately after checking the focus.

Among the Linhof accessories are the multifocus optical viewfinder, at $74.50, which may be adapted for use on any camera up to 8 x 10 inches; the extremely lightweight Reporter tripod at $29.95; the clampod with double-ball joint at $9.95; the professional tripod, a sturdy support with elevator post and pan head, is $175; the Rollex automatic rollfilm holder for 120 film, for Graflex backs, at $57.50, and the de luxe all-leather combination case for the 4 x 5 Linhof at $35.

Another new model on the market is the Kalart H, the 3¼ x 4¼ press-type "camera of tomorrow," which was announced by the Kalart Company, Plainville, Conn. Among the new features are a built-in remote control outlet, which, by permitting operation away from the camera, will allow the photographer to get into the picture. This device also will be useful in cases where it is convenient or desirable to operate the camera at a distance. Another new feature is a combination direct-vision range and view finder, in addition to the Kalart exclusive luminous frame view-finder. The new Kalart will cost $295, equipped with a Wollensak Raptar 127 mm 1/4.5 coated lens in Rapax shutter.

News from the Graflex line concerns wider adaptability of Graflex accessory items. The 120 Graflex roll holder, which is available in two models, one for twelve 2¼-inch-square pictures, the other for eight 2¼ x 3¼, may now be obtained in model to fit any 3¼ x 4¼ or 4 x 5 camera that is equipped with a Graflex or Graflok back. The roll holder also will fit Graphic backs by replacing the regular focusing panel with a spring kit, which then holds the rollfilm unit. On the larger cameras, retainer screws that permit finger tightening, give the convenience of ready interchangeability from rollfilm to sheet film, and the reverse. The holder is $24.95.

Three miniatures have made dealer headlines recently. One is the Rival, a new 35mm miniature folding-type camera of compact size yet incorporating many convenient features and costing $29.95. The other two are the Vitessa, which features a plunger type combination film transport and shutter winder in place of the conventional winding knob, and a "mystery miniature" as yet unnamed, the principal feature of which is that it permits the use of a 24mm wide-angle lens, the shortest focal length ever made for a 35mm miniature.

The Rival is imported from the Western zone in Germany by Peerless Camera Stores. It measures 1⅜ x 3 x 4¼ inches, is supplied with a Schneider coated f/3.5 lens mounted in the new Prontor-S shutter with speeds from 1 second to 1/300th; has built-in flash synchronization and a built-in self-timer. Other features of this attractive miniature include lens alignment by rigid chrome struts; double exposure prevention and intentional double exposure, if desired; clip provided for a rangefinder; red dot signal indicator of need to wind film; automatic exposure counter; cable release socket, and body shutter release. The camera body is covered with genuine morocco leather and satin chrome trim.

The other two miniatures are made by the Voigtlander factory in Germany and are imported and distributed by Willoughby's, 110 West 32nd Street, New York City. The Vitessa sells for $149.50 and is equipped with a 50mm 1:2 Ultran (one of a new series of Voigtlander lenses) in a fixed mount. The shutter is a flash-synchronized Rapid Compur with speeds to 1/300th.

The plunger is a metal post that extends about two inches above the camera top, but when not in use recedes into the camera body and is locked inside with a slight twist. The shutter release button is also at the top. In taking pictures the operator pushes down the plunger with one hand and releases the shutter with the other. This convenience suggests the camera's use for fairly rapid sequence shooting since the photographer merely has to push the plunger down with his finger every time it springs up, and never needs to relax his hold on the camera body.

Another unusual Vitessa feature is the focusing system, which actuates a rangefinder of the superimposed-image type. The rangefinder is operated by turning with the thumb a large knurled knob near the camera top. This moves an independent body unit containing the lens but the lens itself remains stationary. The finder is the combination focusing and viewing type. The camera's novel lens-protecting device is a pair of metal "doors" which push open at the press of a button, exposing the lens in working position, but "hugging" the lens unit. Other features include an exposure counter, a film indicator, film rewind and leather trimming, finished in satin chrome.

The other Voigtlander miniature, which is designed fairly conventionally but allows for lens interchangeability, will be equipped normally with an f/3.5 Color Skopar, an f/2 Ultran or an f/1.5 Noktar, all 50mm lenses. The price will range from $175 to $225, depending on the lens supplied. The flash-synchronized shutter is a Compur Rapid with speeds to 1/400th. The rangefinder type and the focusing-viewing device are the same as on the Vitessa.

An odd aspect of the 24mm lens available for this camera is the fact that because of its design and its f/5.6 aperture, it measures five inches in diameter. Seen from in front when mounted it almost hides the camera, which is about 8 inches high and 5 inches long. Despite its extreme wide angle (it covers nearly twice the field of the normal 50mm lens) the lens is reported to have a flat field; pictures show no distortion. The wide angle will be an accessory lens, along with two telephotos, a 100mm and a 150mm lens. An accessory prism type finder will be available for use with these lenses only.

Glad tidings from Burleigh Brooks Company, 10 West 46th Street, New York City: the Robot II rapid-sequence camera, with the Schneider Xenar f/2.8 lens, is now $165.25; with the Schneider Xenon f/1.9, $217, with carrying case. Formerly they were $194 and $240, respectively. Other Robot news concerns two accessories for this rapid-sequence miniature. One is a daylight loader for the Robot to permit the transfer of the film in a cassette to the regular Robot spool ($5.85); the other is a fifty-exposure motor spring which fits over the regular winding knob of the Robot and costs $6.57.

In the low-price field, Eastman announces two Kodak Duaflex II cameras, new models of the popular Duaflex. They are styled differently and now have a metal hood for the large brilliant view finder, which has been improved by the use of a first-surface mirror in the viewfinder system. With Kodet lens, the Duaflex II is $13.95; with Kodar f/8 lens, $29.95.

Gundlach Manufacturing Corporation, of Fairport, N. Y., has announced Foto-Roll 600, a rollfilm view-camera attachment that takes up to 600 exposures 1¾ x 2¼ inches on a 100-foot roll of 70mm unperforated film. Looks like a dandy for mass-picture production (year books, records, lectures, work progress, identification, etc.). The roll may be cut at any point for developing less than the full roll. The unit fits all view-type cameras and some press and small cameras, can be used horizontally or vertically and may be detached from the camera in daylight. It fits on the camera and focuses like a sliding back and has a counter for recording exposures.

Foto-Roll 600 is made of lightweight wood, mahogany cherry finish, and costs $81. It is also available in a model that yields 2¼ x 3¼-inch pictures, up to 350 exposures to the roll. The 100-foot rolls of unperforated film used in the device are supplied by Eastman Kodak Company in three types, Plus X (PX-474); Super XX (XX-474) and Pan X (FX-474) at $12 to $13 a roll.

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Wollensak 3" f/2.5 CINE RAPTAR TELEPHOTO

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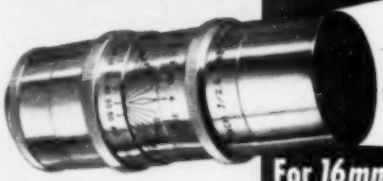

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★ 4 ELEMENT LENS—COATED . . . modified triplet construction with split front crown. This design gives maximum speed with no loss in definition.

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★ SUNSHADE . . . FRONT AND REAR LENS CAPS

Wollensak leadership in lens design and manufacture brings you this superb lens, with features you'll want in your telephoto lens. Here's a range of focus from three feet to infinity and diaphragm stops from f/2.5 to f/22. With Wollensak Cine Raptars you'll get clearer, sharper shots . . . movies of professional quality.

Another Wollensak top quality lens that carries the Raptar name. No Wollensak lens is engraved "Raptar" until it is tried, proven and tested to meet the highest standards of lens performance.

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ASK YOUR PHOTO DEALER to show you the new Cine Raptar lenses and other popularly-priced Wollensak lenses.

Wollensak OPTICAL CO., ROCHESTER 21, N.Y.
MEANS FINE LENSES

Movies

Something really different in amateur movie cameras will be on the market just about the time this issue reaches you, or soon after. It is nothing less than the smallest standard model movie camera in the 8mm field, measuring 2½ x 3 inches—the latest product of the Revere Camera Company, of Chicago. An entirely new design, which required special tooling to put into production, this unique magazine-loading camera will be offered in two models, the B-61 single-lens model at about $115, and the B-63 turret-lens model at about $150. Because of the turret feature, the latter will be a little longer than the B-61 and a trifle wider. Standard lens equipment on both models will be a ½-inch f:2.5. The faster f:1.9 lens will be available at a slightly higher price. A 1-inch and 1½-inch lens will also be offered.

The new miniature movie instrument was practically "wrapped around" the standard film magazine, which determined the camera's minimum dimensions. To load the magazine, a door is opened at one end of the camera and the magazine is pushed in. The camera is simple to operate, positive in action, and has a plastic body, taupe colored, with crackle finish. A strap is attached for convenience and steadiness in handling.

Sometime this year Revere also will introduce the Belgian-made Diaversal direct-positive enlarging paper, which was announced some time ago by The Gevaert Company of America, Inc., of New York, the importers. Revere will be the exclusive distributor in the United States.

The paper will be marketed as part of a Revere kit designed to make enlargements from individual 8mm and 16mm frames. The kit will be $50 for either of two models, one for 8mm, the other for 16mm film, and will contain an enlarger, a supply of Diaversal paper, the required chemicals and perhaps a set of trays. The chemicals will be made by an American firm from formulas supplied by Gevaert.

The streamlined enlarger, which is based on the conventional enlarger design and will double as a film editor, will be about 14 inches high and will make enlargements up to 4 x 5 inches. It will include a light-source housing, a film gate that will accommodate selected 8mm or 16mm frames without cutting, a lens mount to take the lens from the movie camera, and a 4 x 5 easel.

In the movie-lens corner is the extremely wide-angle lens for 16mm movies, the 15mm Wide Angle f:1.3 Balowstar, designed by PSAer Dr. Frank G. Back, of the Zoomar Corporation, 381 Fourth Avenue, New York City. Dr. Back, you will remember, is the genius responsible for the Zoomar lens now widely used in motion pictures and television work. The new coated lens has twelve elements and makes photography possible, even in color, under adverse lighting conditions. The f:1.3 has high resolving power, assuring brilliance, detail and contrast, and provides uniform illumination over the entire picture area. The new Balowstar can be used on any standard camera turret without interfering with the fields of the other lenses on the turret.

Wollensak Optical Company, of Rochester, N. Y., have a new 3-inch f/2.5 Cine Raptar four-element telephoto lens ($89.70), the first of a series of high-speed lenses for 16mm movie cameras. Characteristics of the new series, which utilizes a new type of lens design, include a high degree of correction and resolving power.

Incidentally, Wollensak has recently acquired the manufacturing rights of the Fastax high-speed motion picture cameras which take pictures up to 14,000 frames per second.

Bell & Howell Company, of Chicago, announce a new 8mm magazine-loading movie camera, the Model 172-B, which sells for $129.50 equipped with a 5-inch f:2.5 B&H Comat universal-focus lens; $159.50 with the 5-inch f:1.9. Features include new exposure calculator; positive viewfinder; five operating speeds; single-frame release; nine-foot film run, and 32-ounce weight. The lenses have click stops and are interchangeable with 1-inch and 1½-inch accessory lenses.

CONVENTION HIGHLIGHT

Thurs., Oct. 19th — 12:00 M to 5:00 P.M.

Field trip — and what a field trip! A cruise of Baltimore Harbor on the city's side-wheeler "Latrobe." All the raw oysters you can eat and beer you can drink — plus lunch served cafeteria style during entire afternoon. Pictures of harbor scenes, city skyline, drydock activities, steel mill pictorials, Fort McHenry of "Star-Spangled Banner" fame — plus posed shots of models aboard. A time of a lifetime!

DON'T MISS IT!

Gottlieb Hampfler, FPSA, one of the Convention speakers.

A new version of the Cine-Kodak Magazine 8 camera is offered by Eastman. Although the body and mechanism of this $127.50 camera, with f/1.9 lens, is the same as the current model, the finder has been changed to one designed for use with a fixed-focus lens, plus an interchangeable telephoto lens.

Bolex has some new cases. In addition to the $45 H-1 carrying case recently imported from London for the Bolex H-16 and H-8 movie cameras and accessory equipment, Paillard Products, Inc., 265 Madison Avenue, New York City, American agents for the Bolex line, have an H-2 zipper carrying case. This one is American-made from russet tan cowhide, with interior velvet trim, and costs $30. It has fitted compartments to take an exposure meter, two 100-foot cartons of film and accessories, in addition to the Bolex camera and Kern-Paillard lenses. Extra telephoto lenses are held inside the lid by adjustable dual-position straps.

Color

Probably the outstanding feature of the recent manufacturers' trade show held in conjunction with the Photographers' Association of America fifty-ninth convention in Chicago, was the introduction by Eastman Kodak Company of a new color-print film, Kodak Ektacolor Print Film, the first commercially available color film produced specifically for making duplicate color transparencies from color negatives. Thus, for the first time, any reasonably experienced amateur is enabled to get color prints by the simplest method yet devised: First, by shooting pictures with Kodak Ektacolor film, processing the film into color negatives, then making prints from these negatives within a period of only forty-three minutes.

It was the company's opinion, well supported by pictures on exhibition at the show, that the results on the new print film were equal to the original full-color pictures exposed directly in the camera on either Kodachrome or Kodak Ektachrome film. Moreover, Kodak officials said, any photographer who now processes his own color films can use the new Kodak Ektacolor print film to produce anywhere from one to 10,000 duplicates, "all equal in color and quality," by either contact printing or enlargement.

The new film places no limitation on the size of the final transparency, which may indeed be as large as the Kodak colorama now on exhibition at Grand Central Terminal in New York. This was made with the new film.

The color print film will be available in ten-sheet packages ranging in size from 4 x 5 inches at $4.25, to $61.30 for the 16 x 20-inch package. For the 5 x 7 size, the price will be $7.10; 8 x 10, $15.60, and 11 x 14, $29.75.

Another Ektacolor item: Kodak Ektacolor BW Paper for making black-and-white prints from Kodak Ektacolor negatives. The single-weight paper in E surface replaces Kodak Ektacolor BW Proof Paper and is intended for finished work as well as for proofing. The available sizes are

(Turn to page 570)

"Now Hear This! — All Hands!"

By A Member of the Baltimore Convention Committee

By the time you read these lines, you'll be so close to actual Convention dates that you'll have opportunity to do little else than 'phone the "little woman" to tell her you've decided after all, to run down to Baltimore to the Convention—and in your most honeyed tones (the ones you used so effectively—you hypocrite—to get her to say "Yes" some years ago) to ask her if she won't be a real good egg and throw your tooth brush and camera into your bag so you can make the sleeper.

This may cost you something—say a new hat or that fur neck piece she's been eyeing in the shop window downtown—but brother, this Convention will be worth it. After all, you realize as well as I do that you can't place a money value on anything so soul-satisfying as a good time with people you like to be with—an experience that will live in your memory as long as you stumble around on this oblate spheroid. Hop to it, old boy; the time is now!

If you need a few words of assurance and promise and convincing rhetoric, read on—here's stuff that will show you why this Convention is as necessary to your future mental state as knowledge of where your next meal is coming from or how you're ever going to see Gracie and Junior through school. I've been in on every one of the plans for these big doin's; I know what I'm talking about. Listen!

First of all—the registration committee realizes that ever so many PSAers can't be here every one of the four days so they've arranged for these people, a daily registration fee of $2.00 instead of forcing those who couldn't get here before Friday morning, for example, to pay the full, four-day registration of $5.00. That's going to be perfect for ever so many who can steal from busy work-weeks, no more than a day or two.

MAURICE TABARD — Paul L. Gittings, FPSA

One of the many outstanding speakers on the Baltimore Convention program.

Another thing—as many photographers as are interested in such an annual assemblage of photographic talent and unequalled opportunity for learning are invited to come down here to Baltimore whether they're PSA members or not. They don't have to be members in order to attend—but they do have to register, of course, and pay all fees.

The one exception to this general rule is the member of a PSAer's family who wants to attend several of the social functions but none of the photographic talks or demonstrations; she (or he) will be charged the amount set for the function but will not have to pay any registration fee. For instance—perhaps your darkroom widow wife may want to make the Convention trip with you; she hasn't any interest in learning how to make bromoils nor in how to put O-o-mpfh into a picture, but she would like to go along on the field trip and to attend the Annual Banquet. She would have to pay her part of the field trip cost and she'd have to buy a banquet ticket—but she wouldn't have to pay any registration fees.

Further in connection with darkroom widows who plan to attend—provision has been made for their entertainment during the photographic Convention sessions. They'll see Baltimore and surrounding areas or run down to the State Capitol at Annapolis or perhaps watch a fashion show lunch. They'll have a good time down here just forgetting their hobby-bitten husbands for a little while.

If the local committee has its way, there'll be no wall-flowers or pitiful strangers at this get-together. There's one committee you'll be able to recognize by their badges, whose sole job is to see that everyone who attends meets everyone else at the Convention. Quite a job they've taken on!—but then, this committee will operate under the watchful eye of a gentleman who has been brought up in the hospitable manner of the Old South. If there is anyone who could accomplish so impossible a task, he can—and will!

Here's another bit of interesting news about this Baltimore Convention—you'll get a program which will tell you at a glance just where what is going on. You won't have to sneak over into a corner between sessions to wade thru line after line of closely printed type in order to find out where you have to go for the following session and who is going to talk. If you miss one of the sessions which you wanted to attend, it will be your own fault and you won't be able to blame your loss on a confusing program.

One thing to watch out for—I've heard the committee hold forth on this point several times and I know they

Ralph Gray, APSA, who will show his world-famous movies at the Convention.

mean what they say—you'd better be prompt in getting to the sessions. The program is a tight one; arranging times and room locations for the many various programs which are scheduled has been like setting up performances for each ring of a six-ring circus. In order to pour this show through the four-day neck of the bottle without having it gurgle and spatter, the committee is determined to have sessions begin at scheduled times if the speaker has to start his talk to blank walls and empty chairs. Remember that—or you'll miss out on a lot of good programs—believe me.

Now, about the programs which will be given and the events which will take place which are sure to make you remember the Baltimore Convention as long as you live—it would take most of the pages of this issue of the JOURNAL for me to tell you about how they've been planned and what they'll be like. Instead of trying to give you any such brief, I've picked out just a few of the many unusual sessions and events and have asked the Editor to put them into little boxes and scatter them through this issue to whet your appetite. Read them—and while you're reading, realize that they're just samples. You'll have to be here for the full four days—that's all there is about it! If you don't have the time of your life at this get-together which has been planned almost with you, individually, in mind, I'll be ready to sign your warrant as "Stick-in-the-Mud, First Class."

You have just time enough to make your final arrangements. Get busy with that telephone before another minute slips by.

Reception Committee

Important notice to all members of the PSA who are contemplating attending the Baltimore Convention, October 18–22!

Arrangements for a Reception Committee have been made consisting of members who have been selected from various parts of the country—ones who have attended previous conventions, are familiar with the workings, and well known amongst the membership at large as well as in their own districts.

Look over the names listed below and find the member's name that you know, so that upon your arrival no time will be lost in meeting the various members and in being properly directed.

In addition to the names listed below, the Committee also includes local members and their wives who will take care of all the little details, thereby releasing the out-of-town members to greet the new arrivals.

Some mark of distinction will be provided committee members so that they may be readily identified—so that you can walk right up and say 'Hello.'

Reception Committee

Mr. & Mrs. E. W. Blew, SanDiego, Calif.
Mildred & Eldridge Christhilf, Chicago, Ill.
Tom & Caryl Firth, Trappe, Md.
Mrs. Charlotte Fredrick, Chicago, Ill.
Mr. & Mrs. Ward C. Goughnour, York, Pa.
Mrs. Barbara Green, Brooklyn, N. Y.
Mrs. Hilda Hampfler, Kennett Square, Pa.
Elton & Mary Heglund, Jackson, Mich.
Mrs. Doris Heller, Philadelphia, Penna.
Miss Betty Henderson, Chicago, Ill.
Mr. & Mrs. John R. King, Cumberland, Md.
Mrs. Constance Phelps, Grosse Pointe, Mich.
Mrs. Jayne Quellmalz, Kutztown, Penna.
Marcus Ritger, Newport News, Va.
Miss Evelyn M. Robbins, Springfield, Ill.
Miss Jane Shaffer, St. Louis, Mo.
Miss Doris Weber, Cleveland, Ohio.

GEORGE ROWAN, *Chairman*

1950 PSA BALTIMORE CONVENTION PROGRAM

(As of September 15, 1950)

Wednesday, October 18

9:30–11:45 AM—Registration, Lord Baltimore Hotel (Mezzanine)

9:30–10:30 AM—MPD Board of Directors Meeting—Installation of New Officers—(Parlor M)

10:45–11:45 AM—PSA Board of Directors Meeting—(Parlor G)

1:30– 5:00 PM—Motion Picture Division Meeting—(Founders Room)

1:30– 5:00 PM—General Reception, Lord Baltimore Hotel
—Wardlaw M. Hammond—First showing of PSA Permanent Print Collection Transparencies—(Calvert Ballroom)

3:15– 5:00 PM—General Membership Meeting—All Divisions—(Calvert Ballroom)
—National Council Meeting—(Calvert Ballroom)

7:30– 9:30 PM—Formal Opening of PSA Exhibition—(Baltimore Museum of Art)
—Presentation of Progress Medal Award, Progress Medal Lecture, Dr. Loyd A. Jones, Hon. PSA
—Showing of Color Transparency Acceptances (Baltimore Museum of Art)

9:30–10:30 PM—MPD—K. Siems, "The Hobby I Love" (Baltimore Museum of Art)
—MPD—Richard Lankes, "Some Investigations into the Reproduction of Sound" (Baltimore Museum of Art)

9:30–10:30 PM—Pictorial, Nature, Technical and Color Print Exhibition (Baltimore Museum of Art)

Thursday, October 19

9:30–10:30 AM—A CC Program for all Divisions, "The Use of Tape Recordings for Camera Club Programs"—P. H. Oelman, FPSA, "Photography of the Nude"—Tape Recording (Calvert Ballroom)

10:45–11:45 AM—CD, TD—"The Use of Recordings for Color Transparency Programs"—prepared by George Blaha (Calvert Ballroom)
—CD, TD—Adrian TerLouw, APSA, Eastman Kodak Co., "Prepared Talks for Projection Programs" (Calvert Ballroom)

PD—Gottlieb A. Hampfler, FPSA, "Flower Photography" (Founders Room)
—MPD, CCs—"Projects for Movie Clubs." Showing of picture "Deed to Happiness" by Cincinnati Movie Club (Caswell Room)
—P-JD—Frank Scherschel of *Life* Magazine, "A Magazine Sends Photographers to War" (Parlor H)

12:00- 5:00 PM—Field Trip for all attending Convention—Cruise of Baltimore Harbor—Oysters and Lunch aboard (SS Latrobe)

7:30-10:00 PM—MPD Program for entire membership—Ralph Gray, APSA—"Primitive Patzcuaro," "Our Friendly Enemies," "Glamorous Guatemala," and "Paricutin." (Calvert Ballroom)

Friday, October 20

9:30-11:45 AM—TD—Clinic on Cameras, Equipment, Procedure and Materials (Founders Room)
—PSA Board of Directors Meeting (Parlor H)
—P-JD—Ollie Atkins, *Saturday Evening Post* Washington Photographer, "Free-lancing for the Magazines" (Mt. Vernon Room)

9:30-10:30 AM—CD—George A. Young, APSA—Color Slide Clinic (Calvert Ballroom)
—MPD—Executive Committee Meeting (Parlor M)
—PD—Commentators Conference (Caswell Room)

10:45-11:45 AM—CD, MPD, ND—Edward A. Hill, APSA, "Invisible Motion" (Calvert Ballrom)
—PD—Directors Meeting (Parlor I)
—TD—Ralph Evans, Eastman Kodak Co., "Derivations from Color Photography"

11:45- 1:15 PM—TD—Luncheon and Annual Meeting (Caswell Room)

1:30- 5:00 PM—CD, TD—Color Clinic, Howard Colton, APSA (Calvert Ballroom)
—MPD—Amateur Motion Picture Show (Caswell Room)
—PD—Edward L. Bafford, Demonstration, "How to Make Bromoils" (Founders Room)
—P-JD—David Eisendrath, APSA, "Know Your Camera Technique" (Federal Hill Room)

1:30- 5:00 PM—ND—Samuel Dunton, N. Y. Zoo, "Animal Photography" (Mt. Vernon Room)
—ND—Dr. Brown, Botanist, "Plant Photography" (Mt. Vernon Room)
—ND—Mark Mooney, Jr., APSA, "Judging of Nature Prints" (Mt. Vernon Room)
—TD—K. Pestrecov, APSA, Bausch & Lomb, "A Theoretical Study of Errors of Focusing Scales"
—TD—G. Espy, Weston Electrical Instrument Corp., "Densitometers and a True Exposure Meter and Their Applications"
—TD—Dr. Harold E. Clark, The Haloid Co. "Xerography Plate Sensitizing"
—TD—E. T. Larson, Ansco, "The Formation of the Photographic Image by X-rays"
—TD—E. C. Yackel, Eastman Kodak Co., "Stabilization Processing of Films and Papers"
—TD—Bernhard Landow, Ansco, "The Hersol Process"
—TD—L. J. Parker, Eastman Kodak Co., "Print Toning"
—TD—Walter Clark, FPSA, Eastman Kodak Co., "Tropical Photography"
—TD—Other papers of a technical nature

3:15- 5:00 PM—CD—Paul Wolf, "Make the Most of It" (Calvert Ballroom)
—P-JD, MPD—Dave Stickel, WMAR-TV, "News Photography for Television" (Caswell Room)
—PD—Maurice Tabard, "Solarization and Interpretative Photography" (Carnival Room)

5:00- 7:30 PM—MPD Annual Banquet (Caswell Room)

7:30- 8:45 PM—CD, ND, MPD program for entire membership
—Charles J. Cignatta, "Wildfowl of the Chesapeake"
—Mrs. Harold L. Medbery, APSA, "Europe Through the Camera Lens" (Calvert Ballroom)

9:00-10:30 PM—PD, Program for entire membership. Philippe Halsman of *Life* Magazine, "Magazine Cover Photography" (Calvert Ballroom)

Saturday, October 21

9:30-10:15 AM—CD—Color Transparency Show, "Color Photography in England"

9:30-11:45 AM—MPD—Motion Picture Division Meeting (Parlor M)
—TD—C. T. Holliday, Johns Hopkins University, "High Altitude Photography"
—TD—Capt. J. H. McElroy, USN, "New Developments in Naval Photography"
—TD—Lt. Comdr. W. R. Fraser, USN, "Television Recording in the Navy"
—TD—Karl H. Schadlich, Ansco, "The Resolving Power of Ansco Color Film"
—TD—Other papers
—PD—"Contemporary Photography"—Panel Discussion by Adolf Fassbender, Hon. FPSA, Bruce Downes, Jacob Deschin, APSA, and John R. Hogan, FPSA. Norris Harkness, APSA, Moderator (Calvert Ballroom)

10:15-11:45 AM—CD—Fred Tietzel, "Double Exposures and Composites to Tell a Story" (Caswell Room)

10:45-11:45 AM—ND—Annual Committee Meeting (Parlor H)

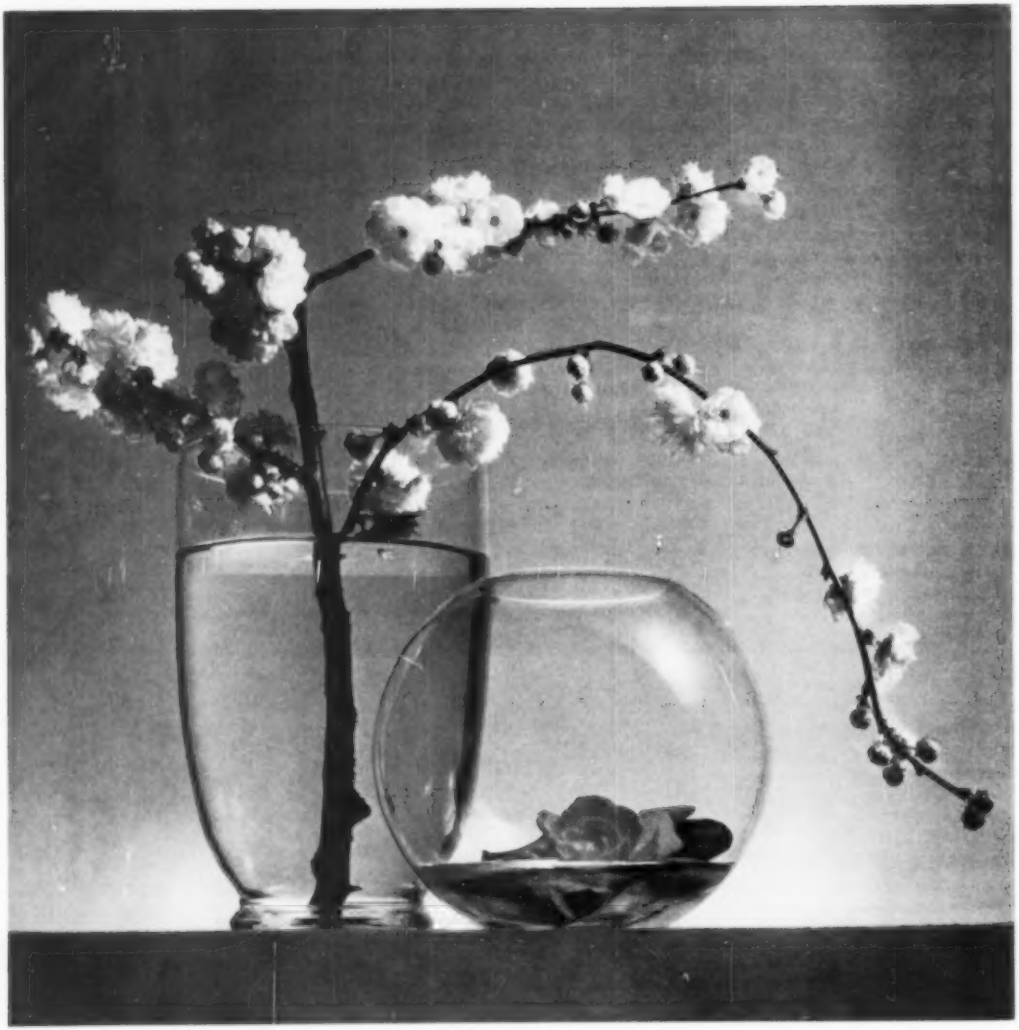
1:30- 3:00 PM—CCs, CD—Louis J. Parker, APSA, "Problems and Color Slide Exchange Sets" (Caswell Room)
—CCs, CD—George M. Rowan, *Camera* Magazine "What Makes a Good Club Bulletin" (Caswell Room)
—PD—Carl Mansfield, APSA, "Human Interest Photography" (Calvert Ballroom)
—P-JD—John R. Whiting, APSA, "Reader Interest in a Photographic Magazine" (Parlor M)

1:30- 5:00 PM—TD—Frank G. Back, Zoomar Corp., "Modern Requirements in Photographic Lenses"
—TD—R. H. Bingham and H. Hoerlin, Ansco, "The Color of Natural Daylight"
—TD—Howard Colton, APSA, Eastman Kodak Co., "Ektacolor Print Film"
—TD—John G. Hainsworth, Ansco, "Rapid Processing of Printon"
—TD—Allen Stimson, APSA, General Electric Co., "Effects of Spectral Energy Distribution on Photographic Exposure"

3:15- 5:00 PM—CD—Roy Bulger, "What Makes New England Different from the Rest of the USA?" (Caswell Room)
—PD—L. Whitney Standish, FPSA, "How to Compose Photographs for Oomph!" (Calvert Ballroom)

7:30-10:00 PM—Annual Banquet featuring Maryland cuisine
—Presentation of Awards (Calvert Ballroom)

The Technical Division Program is subject to slight modification from that given. Additional talks by speakers from Ansco, Eastman Kodak Co., and Zoomar are being scheduled.



"PRUNUS TRILOBA"

H. J. Ensenberger

From The Twelfth International Milwaukee Salon of Photographic Art

"How To"

No. 10—MAKE COLOR AND BLACK-AND-WHITE PICTURES BY FLASH, SECOND INSTALLMENT

JOHNNY APPLESEED, APSA

LAST MONTH we broke into the field of flash photography with an introductory discussion on choice of film, bulb characteristics, film development, batteries, etc. If you haven't read that column, you should do so before reading this addition.

Flash Without a Synchronizer, Open Flash

It has become so commonplace to see photographers use synchronized flash, we are inclined to forget that almost any camera can take flash pictures, even if it has no synchronizer. The minimum requirement for flash is that the camera have either a "time" or "bulb" shutter setting.

Here's how to go about open flash photography without a synchronized shutter. Set up your camera on a sturdy mount; a tripod or even a table will do. Focus the camera on the subject. Set the shutter at "time" or "bulb." Now screw a flash bulb with broad base (such as No. 50, 3, 22, 11, 0, 40) in a house-current receptacle with a reflector. Place the lamp and reflector so as to illuminate the subject. Of course, the switch should be in the "off" position. The house current replaces the usual batteries as a power source.

If you prefer, you can flash the bulb from your regular flash gun if there is a switch on the gun. If this procedure is used, the other steps remain the same, except that house current is not used. Also, there is a cheap, hand held photo flasher which accommodates midget bulbs.

Dim the room lights—have only as much as needed barely to see the equipment and subject. The amount of light permissible in the room will depend upon how fast you can work and how much subject movement there is (the more movement, the less light tolerated).

The success of open flash relies upon the fact that the amount of ordinary room light to strike the film will be insignificant and that the shutter will be opened only momentarily, while the bulb is being flashed. Therefore, it is advisable to use open flash in a dimly lighted or dark room. In a totally darkened room there is little reason to worry about any image other than the one produced by the flash. Certain bulbs (see table) are made specifically for open flash work, but any of the S, M, or F bulbs (see last month's column) will give you an effective shutter speed of about 1/200 second in a reasonably dark room, even though the shutter is actually open for as long as 1/2 seconds. This effectively fast exposure is attributable to the short duration of illumination from these bulbs (as contrasted with the FP type, which are not suitable for most open flash work).

To make the exposure, go through the following operations in the order given: open the shutter, close the flash circuit to fire the bulb, close the shutter; that's all there is to it.

If you want to fire more than one bulb at a time, attach the sockets in parallel (the way all house wiring is customarily done) and control *all* bulbs with *one* switch. Flashing bulbs with house current as the electricity source will not burn out the house line fuses.

Open flash is a handy technique to use when you want the maximum light from the bulb, even when your camera is equipped with synchronized flash. Since the shutter is open all during the flash, all the light produced by the bulb is used for a record on the negative. By contrast, with synchronized flash only a fraction of the output is utilized if a "fast" shutter is used. For this same reason, you should note that the recommended exposure index value is higher for open flash than for synchronized flash (at 1/100 second, for example) for any given bulb.

Multiple Flash—The B-C Circuit

The usual procedure with flash photography is to use the bulb near or at the camera. The result of this type of lighting is flat, even illumination of the subject, which in portraiture frequently will be considered undesirable and uninteresting. There are several ways to get a variation and to introduce some of the "modeling" effects common to good portraiture.

1. The easiest means to accomplish modeling is to move the light source away from the camera, to one side and slightly above the subject. This technique may not fully satisfy the more critical photographer because of the heavy shadows it is likely to produce.

2. By using method No. 1 but by introducing a reflecting surface such as white paper or cloth or a light colored wall on the shadow side of the subject, it is possible to "fill in" such shadow areas.

3. Another alternative is to use more than one flash bulb synchronized with the shutter. For this purpose most flash holders have plug-in provisions for attaching electrical connections to auxiliary sockets with reflectors. In this way it is possible to flash from one to three bulbs from one flash "gun." *Absolutely fresh* batteries are required for multiple flash. Modeling can be achieved either by regulating light-to-subject distances to give desired light ratios, or by using bulbs of different light output. The latter is a convenient method which also offers the possibility of saving a few cents on bulbs.

Bulb placement should be as for regular studio portraiture with photoflood or similar illumination. An interesting starting arrangement with two bulbs of varying light output uses a No. 22 bulb as the "key light" in the 11 o'clock position (above the subject and slightly to one side and front) with a No. 11 bulb as the "fill in" at or near the camera, on the opposite side, at the same or slightly greater light-to-subject distance as the No. 22. Since the light outputs for these bulbs are about in the ratio 2:1, if reflectors are equally efficient a modeling ratio of 2:1 should be realized in the negative. If a greater ratio is desired, do either of two things: (1) increase the "fill in"-to-subject distance or decrease the "key light"-to-subject distance or (2) use an SM or No. 5 for the "fill in."

In any case, exposure should be calculated on the basis

DATA FOR COMMON FLASH BULBS

Manufacturer's Number or Name for Bulb	*Class*	*Type of Use for which Suitable*	*Type of Base on Bulb*	*Approximate Total Light Output in Lumen-seconds*	*Color Temperature*	*Voltage Recommended*
SM	F	Small size makes easy to carry and use. All-purpose bulb for most ordinary use where large quantities of light are not needed to cover large areas.	Bayonet	5,000	3300° K	3 (at least 2 batteries)
SF	F		"	5,000	3300° K	"
No. 5	M	Same as above. Gives more light than SM or SF. Can be used best with cameras with shutter delays (see last month's column).	"	16,000	3800° K	"
No. 25	M		"	20,000	3800° K	"
No. 5B	M	Intended primarily for use with color films for "filling in" deep shadows or as a primary light source indoors. Use only daylight color film with blue bulbs. Follow film manufacturer's instructions in selecting lens filter.	"	7,000	6000° K	"
No. 25B	M		"	8,000	6000° K	"
No. 11	M	Most popular bulbs for holders with receptacles for medium base bulbs. Good for any use requiring more light than available with No. 5 or 25.	Medium	28,000	3800° K	"
No. 40	M		"	30,000	3800° K	"
No. 22	M	Specially made to give most of illumination in short peak. This makes bulb excellent for action and for open flash where a lot of light is needed. Made specially to operate with safety on house current for open flash.	"	62,000	3800° K	3-125 *
No. 2	M		"	62,000	3800° K	"
No. 22B	M	Intended primarily for use with color films for "filling in" deep shadows or as a primary light source indoors, where more light is needed than is available from 5B or 25B or where medium receptacle dictates choice. Has useful characteristics for open flash for reasons given with No. 22 and No. 2.	"	27,000	6000° K	"
No. 2B	M		"	28,000	6000° K	"
No. 6	FP	For focal plane shutter. Companions to Nos. 5 and 25, respectively. Not to be used with between-the-lens shutters.	Bayonet	15,000	3800° K	3 (at least 2 batteries)
No. 26	FP		"	15,000	3800° K	"
No. 31	FP	Most potent bulb available for focal plane work. Focal plane companions for Nos. 22 and 2, respectively. Good for action. Not recommended for open flash.	Medium	77,000	3800° K	"
No. 2A	FP		"	77,000	3800° K	"
No. 50	S	Best for covering large areas where slow shutter speed (1/25 second or more) can be tolerated. Also good for open flash where large areas must be covered. Made specially to operate with safety on house current for open flash.	"	94,000	3800° K	3-125 *
No. 3	S		"	110,000	3800° K	"
No. 50B	S	Have the general characteristics of Nos. 50 and 3, except coated blue for use with color films. This coating reduces the total light output, compared with clear bulbs.	"	43,000	6000° K	"
No. 3B	S		"	50,000	6000° K	"

* Bulb can be fired with house current with safety.

of the nearer (more powerful) light, disregarding the "fill in."

Frequently the professional or press photographer, and occasionally the amateur, needs to shoot flash pictures under conditions where a large amount of illumination is necessary either to cover a large area or to stop action. Particularly with color this becomes a problem. The B-C circuit, recently popularized by Joe Costa, APSA, is the only reasonable solution.

The B-C circuit uses a capacitator between the batteries and bulbs and so two ordinary dry cells can fire as many as 20 or 30 bulbs with real efficiency. Battery drain is so slight that useful battery life is 1–2 years, compared to the usual recommended flash life of 3 months or 100 flashes (whichever comes first). More about this circuit and how to make your own B-C unit will be given in a later column. If you're anxious for its appearance, drop me a line. If enough interest is shown the subject will be moved ahead in the schedule.

Flash to Supplement Sunlight in Black-and-White and in Color

Particularly in outdoor portraiture, pleasing effects can be obtained by using sunlight as a back or side light and then filling in with synchro-flash from near the camera. A suggested starting setup for outdoor color portraiture is as follows. Allow sunlight to come from above and to one side of the model (say, your left) in such a way that part of the subject's cheek (right in this case) is in sunlight. Then fill in the shadow (subject's left) with synchro-flash from the right side of the camera. Generally speaking, the reflector should be a trifle above the subject's eye level and pointed in the general direction of the sun. Avoid shadows from the flash illumination by subordinating the flash to sunlight.

Flash-to-subject distance will depend upon the following factors:

1. Degree of contrast desired between highlight and shadow. For color photography this should not usually exceed 3:1, while in black-and-white it can be as high as 10:1 and still get good results. Reflector efficiency is a factor, too, in determining amount of light to reach the subject.

2. Kind of flash bulb used. Under most circumstances one of the midget bulbs will be quite adequate, although larger bulbs can be used by moving the bulb and reflector farther from the subject.

Shooting Daylight Kodachrome (sheet or 35mm) under the setup just described, I use a No. 5B or 25B bulb at about 6 feet from the subject in a polished 5-in reflector. Exposure is according to the sunlight, or about 1/25 second at f/8 on a clear day between 10 AM and 4 PM, with no allowance for flash. To compensate for the blueness of light from the flash bulb I use a CC14 or CC15 filter on the lens when shooting color.

A similar technique can be employed for black-and-white, but usually the fill in should be at about 8–10 feet for blue bulbs (5B or 25B) or 10–12 feet for clear bulbs. A handy method to reduce "fill in" illumination from bulbs, and so to permit their use closer to the subject, is to place one or more folds of white handkerchief in front of the bulb. This also helps as a protection in case the bulb shatters on being flashed.

More About Bulb Choice

The accompanying table will serve as an aid in selecting the proper bulb to do your job. All data are according to manufacturers' published claims.

A Few Summarizing Hints on Flash

1. Be sure to use *fresh* batteries, preferably the photoflash variety and not the kind intended for hand flashlights. Safe battery life is 3 months or 100 shots, whichever comes first. Note that an expiration date is printed on each battery.

2. Guard against blocked-up highlights by avoiding overexposure and overdevelopment and by careful selection of film (I prefer orthochromatic for most flash with clear bulbs).

3. Choose your flash bulb to fit your equipment and the job to be done. See the accompanying table.

4. When using flash for "fill in," balance sunlight and flash to keep sun the main source. Avoid shadows from the flash. Disregard the flash in determining exposure.

5. Where flash illumination is the major light source, disregard other sources (such as room light and sunlight) in determining exposure. Calculate your exposure on the basis of *light*-to-subject distance, not *camera*-to-subject distance.

6. With multiple flash, base your exposure *entirely* on a single, main light source. This will be either the largest or nearest source, whichever gives the most illumination as shown by calculation of exposure index.

7. Use blue bulbs with daylight color films, clear bulbs with tungsten color films. When making color pictures with flash, follow manufacturer's instructions on use of a color correcting filter on the camera lens.

8. When making pictures by open flash, keep general room illumination to a minimum to avoid fuzziness due to weak images of moving objects.

What do you know about flash that should be made known to amateurs? If you have specific techniques and choice setups, why not send them to me at PSA Headquarters, 2005 Walnut Street, Philadelphia 3, Pennsylvania? Best comments will be printed as space permits. What about your problems? Send them in, too. That's the idea of this column.

Next month: How to Make Photographic Christmas Cards.

South Africa

DEAR JOHNNY:

I am afraid I am going to distress you.

Agitation: I use flat film and never agitate at all. Just gently lift and lower the rack a few times into the already filled tank, to displace initial bubbles. Then leave them alone. I get no irregularities in development. The free matter falls to the bottom of the tank by gravity when the films are vertical.

Development time: I need no stop-watch. Nearer a calendar! Using a slow film and a borax developer and a diffusion enlarger, the best on the market, I believe, I develop for 60 to 90 minutes. And the negatives are fine.

Viscose sponge: You do need to keep it in a Mason jar or such like, else it will accumulate dust and act like sandpaper. Put the damp sponge after use into the sealed jar with a block of camphor. I understand that kills or restrains mold bacteria or whatever the technical men call the little fellows who start mold. Other substances known to any chemist would probably do equally well. I have kept sponges so for years.

R. W. OSBORN

DEAR MR. OSBORN:

My replies are listed below under the same headings you used.

Agitation: By my experience you are very lucky not to have development troubles if you do not agitate. Usually, developer by-products flow down the sheet and give a one-sided halo appearance, particularly around areas of high density. On the other hand, if you are not having trouble, I suggest that you continue without disturbing your technique.

Development Time: Your statements are most intriguing. I am sure many of our members would like to know more about the enlarger you use, whether you give more or less than the recommended exposure, and what kind of developer permits you to develop for 60 to 90 minutes. How do you know whether to develop for 60 or for 90 minutes? After all, compared with 60 minutes, 90 minutes is an additional 50%.

Viscose Sponges: Camphor tends to restrain growth of certain organisms, but it is not all-inclusive. It could be your darkroom has not been infested by the type of bacteria or mold that are not controlled by this chemical. In my experience, it is best to store viscose sponges where they will dry, out of contact with air that may be contaminated by dust. Of course, if you keep a sponge wet and if it tends to sour, you can wash it out with hot water and soap. It seems to me though that keeping sponges wet or washing them with hot water tends to break them down and that soon they will leave small particles of the viscose on the negatives.

JOHNNY APPLESEED, APSA

* * * * *

Wapakoneta, Ohio

DEAR JOHNNY:

Just returned home from a wonderful two weeks' vacation through the New England States and Quebec. The four of us had the Maine coast on our itinerary and were enthusiastic about your "How To Take a Photographic Vacation to the Coast of Maine." In fact, I took the PSA JOURNAL and we referred to it mile by mile and paragraph by paragraph. We ate at some of the places suggested, visited most of the places and "burned up" the film as you intimated.

We stopped at a gas station and asked how far it was to Oak Hill (really Oak Wood) and the attendant said, "I read that article, too (noticing the magazine in car). They also mentioned our cabins a few miles up the road."

We mentioned the PSA JOURNAL to the hostess at Oak Wood and she and the owner were glad to see the article.

By the way, one spot not mentioned in PSA which we enjoyed was the "Desert of Maine."

Your article was most helpful in making our Maine coast visit more enjoyable. We can now re-read the article with vivid memories. I wish that the PSA article were available to everyone who traveled the Maine coast.

MARJEAN HEADAPOHL

P.S. We didn't see the Portland Head Lighthouse, it was getting dark and we didn't want to get lost.

DEAR MISS HEADAPOHL:

Thanks for your enthusiastic, favorable comments on the Maine column.

Judging by the letters we're getting, it seems that PSA members are enjoying Maine and that Maine is learning a lot about PSA. That's all to the good.

One photographer just returned from Maine and reported that the Army has closed Portland Headlight to tourists. That's a pity.

Some day I'll try repeat performance with Quebec, Gaspe, Vermont-New Hampshire, etc. Possibly you or others have some tips you'd like to let me have when writing up those areas.

JOHNNY APPLESEED, APSA

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Pemaquid Point, Maine

DEAR JOHNNY:

You are a fibber. We brought a gallon of red paint to paint nudes with. Heck, they would not let us touch them. Met Clarence Ruchhoft in Ogunquit. Everything otherwise in order.

ART UNDERWOOD & LARRY SPAVIN

Rochester, New York

* * * * *

Lincoln, Nebraska

DEAR SIR:

I need plans for copying hand volume records (2" x 3" x 6") onto 35mm slides using Argus, Perfex, or Kodak 35. Can you help me build such apparatus?

W. F. CARLISLE

DEAR MR. CARLISLE:

Your request has me sorta stumped. When I first received your card it seemed that a specific and worthwhile column might be written in answer to your need, but after giving the matter careful thought it seems best to answer in a general way and then ask for additional questions. Also, I am confused by the 2 ft. x 3 ft. x 6 in. dimensions given: shouldn't there be only two dimensions, or isn't this flat copy?

Variations among the cameras mentioned in your card make it virtually impossible to be more specific; however, by writing to the manufacturers you can get answers to any questions left unanswered here. Or, you can try me again with specific questions.

Here is how I would go about a copy job with a 35mm camera.

First of all, you will need the following equipment in addition to your camera:

1. A supplementary lens for your camera to permit close-up work. Your dealer can help you select the size that will fit your camera. You will probably need a Portra No. 3 or the equivalent.

2. A lens attachment with which to adapt the supplementary lens to your camera; maybe your filter adapter ring will do the job.

3. A camera mount. This can best be an enlarger post or the equivalent, some piece of equipment which will permit you to suspend your camera sturdily over the copy and to raise and lower the camera or the copy.

4. A pair of lights with reflectors for lighting the copy. A convenient arrangement is two No. 1 Photofloods in goose-neck desk lamps.

5. A flat surface below the camera on which to hold the copy.

6. A small piece of ground glass on which to focus.

7. A suitable film. Choice will depend upon the job to be done. This will also determine whether you need a special developer.

Having settled on your supplementary lens, mount your camera with lens in place as mentioned in No. 3. Be sure to allow enough clearance between camera and support so that the camera need not be tilted to cover all the copy in its field, that is keep the film plane parallel to the copy surface. This will minimize distortions and focus troubles that will come if the two are not parallel. Center the material to be copied under the camera.

Set the camera at the distance from the copy prescribed by the supplementary lens. Take off the camera back and place over the film aperture *in the film plane* the piece of ground glass (item No. 6) *frosted side down. Do not rely on the view finder for close-up work.*

Place the lights (see No. 4) near the material to be copied in such a fashion that they illuminate the sheet uniformly and without glare to the camera lens. If you have trouble eliminating glare and reflections, take your picture through a circular hole in a piece of black paper arranged in such a way that the paper does not cut out the image but still screens scattered light. A polascreen will accomplish the same objective. Open the shutter and focus on the ground glass. Move the material to be copied so as to center it and adjust the lights for final evenness of illumination. When all this has been done, mark on the surface holding the copy, the exact sheet position so that other sheets can be placed similarly and thus avoid having to refocus each new object. Maybe you can use your enlarger easel to hold the sheet.

Close the shutter, remove the ground glass, and replace the camera back. You are now ready to load the film.

Film choice will depend upon the job to be done.

Line drawings and printed pages require a film that has high inherent contrast characteristics, such as Micro-File or one positive film.

Material with several tones, that is tones of gray in addition to black and white, can be copied on direct positive film if transparencies for projection are needed. If you want to make prints,

use cine positive or one of the regular fine grain negative films. In any case, process the film as recommended by the manufacturer.

You may need to consider using a filter over your lens to emphasize a certain color, to minimize a stain, or to help control contrast.

Color film can be used too for copying. Use clear bulbs (not blue ones) and tungsten light film.

The best way to determine exposure is to take a meter reading from a white card held in the same light and plane as the material to be copied. When a white card is used, the usual exposure index should be divided by 5.

Of course, if it's multiple copies you want, one of the new reflex copy papers is just the thing.

JOHNNY APPLESEED, APSA

* * * * *

Oak Ridge, Tennessee

DEAR JOHNNY APPLESEED:

I hope you get to control processes soon. What little I have been able to glean of these fascinating arts is just short of what is necessary to make them work.

In the current discussions in your columns concerning the processing of films may I add my two cents worth of experience? Mr. Walters, of Decatur, writes of trouble with water spots on films. Since this is such a common complaint, would you be interested in a technique which works? Naturally, so here it is. The gelatin emulsion, when wet is quite soft and fragile, so leave it alone until it is dry. After fixing in fresh hypo and washing as recommended, hang the film up wet (with or without bathing in wetting agent) and leave it alone. Do not sponge.

Hang preferably in a cool spot and do not use heat for drying as that will render more acute any difficulties with water spots. When we are in a hurry we hang film in front of our air conditioner which gives out a blast of *cold*, dehumidified air.

When dry, any scum marks from hard water or chemicals may be easily removed from the film with a soft, lintless cloth moistened if necessary with carbon tet, benzene, ferrotype polish, or most any slightly oily wax. Don't use much of any of these—just the slightest bit will be enough.

I have compared notes with amateurs who have had trouble with water spots, sponge marks, lint, etc., on their films and find that most of them are handling their films too much while they are wet. If scratches are not made on the wet emulsion they will not be there when the film is dry.

The above-mentioned techniques are the only way we have been able to keep 35mm film absolutely spotless so that enlarging in a condenser enlarger is feasible. Keeping the film cool and untouched until dry have also been used successfully with cut film, roll film, and glass plates. I would especially recommend these techniques because they are so simple, require the purchase of no special equipment, and are probably less work than what most amateurs are doing already.

W. R. MCINTOSH

DEAR MR. MCINTOSH:

The technique mentioned in your letter makes me shudder. But, as I have said before, if it works for you, don't change. I'm afraid though, for the fellow whose luck isn't as good as yours. Perhaps water spotting needs some elaboration.

Among the factors that promote water spots (and so should be avoided) are the following: (1) any technique that leaves drops of water hanging on the wet film, (2) rapid drying, and (3) drying the film at high temperatures. When any or all of these factors are sufficiently controlled, there will be no physical deformation of the film and no effect on the silver image.

Calcium or other salt deposits from hard water are another problem. Salt deposits can be removed rather easily from the back (side opposite of emulsion of 35mm film) with alcohol and a cotton swab. They are more difficult to remove completely from gelatin surfaces (emulsion, or back of roll or sheet films).

I assume the "do not sponge" warning is to prevent scratching of 35mm films, which, of course, is particularly important with a condenser enlarger. However, either a wetting agent or lintless blotting paper should be used in this case to minimize all water spot effects. Cool drying is a help too. Hastening the drying in any way is flirting with trouble. From the standpoint of scratches and other physical damage, "hands off" as much as possible is good advice, of course, but from the standpoint of water spots it is not safe to shrug your shoulders about surface drops on the film.

Here is another approach. Surface grit can be removed by swabbing the film while it is still in the wash tray, under water. Use absorbent cotton. With this technique there is little chance of scratching. Then bathe the film in a wetting agent and hang it up to dry without sponging. The absorbent interleaving paper is a good blotting material but is less convenient than Photo-Flo.

JOHNNY APPLESEED, APSA

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Wauwatosa, Wisconsin

DEAR JOHNNY:

Say there, Jake, here are a few points you might discuss in your column:

1. Waxing or shellacking of prints.
2. Drying, trimming, and mounting 14x17's and 16x20's.
3. "Mixing your Own."
4. Drying negatives. (How long it should take—how to keep a sponge or chamois soft without decomposing in a jar of water.)

BOB LAUER

DEAR BOB:

After receiving your card we printed a column on "How To Wax or Lacquer Prints" in the July issue of PSA JOURNAL. That should fill request No. 1 unless you have questions.

Item No. 4 was answered by comments in the May 1950 JOURNAL. There is another comment from a South African member that is printed in this column. Some day we may devote a whole column to drying negatives.

No. 2 will be covered sometime after January 1951.

Please tell me more specifically what you want in connection with No. 3. Other readers should do likewise. Do you want formulas? Or are you interested in tips on short cuts and conveniences in mixing? Or all that plus more?

All members interested in a column on "How to Mix Your Own" should drop me a card at PSA Headquarters, 2005 Walnut Street, Philadelphia 3, Pennsylvania. Tell me what you would like discussed in the column and ask questions to be answered.

JOHNNY

* * * * *

Dumont, New Jersey

DEAR JOHNNY:

I was very much interested in your article about Waxing. Since the beginning of my exhibition career in 1937, I have used waxing to improve especially low key prints. During these years I came upon many favorite solutions or private formulas. I have tried quite a few of them; however, they all did not come up to my favorite, the Eastman Print Lustre. What most workers hold against it is that it dries very fast, not allowing any smoothing out if the application is not uniform. I consider the fast drying an advantage, as it makes it possible to dry mount the waxed print after only 15 minutes. The only care that has to be taken is that the Print Lustre is not applied too heavy and that the print is covered with a wax repelling paper (kitchen parchment papers do well) during mounting.

Print Lustre gives the shadows a luminosity which all of the solutions I tested throughout the years did not produce. This includes Torch Solution, Print Lacquer, Print Varnish, Simonize, furniture polish and some secret private formulas.

My technique of applying the waxing solution differs somewhat from the directions given by the manufacturer. I place the print, which may be waxed before or after mounting, on a work bench against the light. The print must be completely flat and dry. It is advisable to go over the back of the print with the hot iron to remove all dampness. Now I prepare a pad of lintless cheesecloth by cutting off a length of about 12 inches and folding it in such a manner that the cuts are inside the pad. (There is no completely lintless cloth). This pad is soaked with Print Lustre, not too much and not too little; it has to be pretty good and wet. A few trials will show the right amount. And now I apply the waxing solution by going over the print with slight pressure north-south and then west-east, watching the surface against the light to prevent uneven application. The waxing should not take more than 10 seconds. Don't touch the print any more now. Fanning with a cardboard will speed up the drying. If not too much

MAPLE SUGAR WAGON — A. Aubrey Bodine, FPSA

waxing solution was applied the print will hardly be sticky after 5 minutes and can be dry mounted. Try this when you have to finish up a print for tonight's club competition and you haven't had time to do it in advance.

If I decide to wax a print after mounting (for heavy waxing), I leave a margin of about one inch of the dry mounting tissue around the print. This will protect the mount, later it is trimmed off with a razor blade.

HANS KNOX, FPSA

DEAR HANS:

Thanks a lot for your detailed description of your pet method for applying Print Lustre. I'm sure the members will be very much interested in trying your technique—I certainly will.

Your comments are typical of the kind we hope by this column to draw from members on all sorts of subjects. If we can do this, the effort will have been repaid. Thanks again.

JOHNNY

Photographic Standards

How Published American Standards Can Benefit Your Personal Photography

BY JOHN M. CENTA *

WITHIN THE past several years the officers of PSA have become increasingly interested in the significance of the work in photography being done by the American Standards Association. In order to provide for more active PSA participation, the Technical Division was commissioned by the national officers to establish a PSA Standards Committee composed of members from all PSA Divisions whose responsibilities are two-fold:

A. To assist in the preparation of and to review the photographic work in ASA; to interpret the benefits of these standards to PSA members; and to advise ASA of the standardization needs of PSA members.

B. To sponsor or prepare recommended practices or standards for use only within PSA on subjects of interest to PSA members (such as the current proposed revision of the PSA Light Box).

* Chairman, PSA Standards Committee.

As an outgrowth of this expanded interest and participation by PSA in standardization work, and to permit even further participation, the officers of PSA applied for an associate membership in ASA, and we have been advised by Admiral Hussey, Secretary of ASA, that this application has been approved.

Your officers in PSA have thus taken all steps possible to provide you, as groups and individuals, with an organization that will permit you to make effective use of the American Standards Association work and to develop our own PSA standards when required. However, the benefits you personally derive will be directly proportional to the interest in, and the use you make of, the available standards.

For a brief resume of the type of American Standards now in effect or being developed, the subject matter of photographic standards can be roughly classified into three arbitrary but descriptive categories:

(1) "*Product*" standards concerned primarily with dimensions or physical characteristics which must be applied by the manufacturer, and concern the consumer only in the reproducibility or interchangeability of products. Standards representative of this category are those defining "Dimensions for Professional Portrait and Commercial Sheet Film (Inch Sizes)"; "Dimensions of Inch-Size Photographic Paper"; "Lens Aperture Markings"; "Specifications for Threads for Attaching Mounted Lenses to Photographic Equipment"; and many others. Detailed knowledge of this type of standard by PSA members is unnecessary in most cases as such information is readily available to those who wish to know the specifications for, and limitations of, their photographic tools. With this type of ASA data, the photographic designer can plan his techniques and equipment to operate within these tolerances for all manufactured products. Regardless of the level of interest, these standards are important to all our members because of the benefits to them in terms of lower costs, interchangeable parts or materials from different manufacturers, uniform practices, etc.

(2) "*Consumer*" type standards can almost be considered as consumer purchase specifications since they define a minimum desirable quality of material that will give an excellent photographic result. This type of standard is meaningless and valueless unless accepted by an informed consuming public who will appreciate their value in terms of improved quality and *will demand that their purchases conform to these standards*. Standards representative of this category are those covering "Photographic Grade Thermometers"; "Chromium-Plated Surfaces for Ferrotyping"; "Photographic Grade Chemicals" (all commonly used chemicals are, or will shortly be, covered by standards specifying the purity required for excellent photographic work); "General-Purpose Photographic Exposure Meters (Photoelectric Type)"; "Specifications for Slidefilm Projectors"; etc. Here again, the benefits of such standards to our members are many and, for the most part, obvious.

(3) *Recommended practices* covering many phases of photography have been prepared by ASA expressly for consumer use and should be much more widely appreciated and utilized by PSA members. These recommended practices represent the consensus of experts from all phases of photography and refer directly to every day problems and practices of our own darkrooms, such as "Methods of Testing Printing and Projection Equipment"; "Method for Predicting the Permanency of the Silver Images of Processed Films, Plates, and Papers"; "Practice for Photographic Processing Manipulation of Films and Plates"; "Method for Determining Maximum Safe Temperatures for Photographic Processing Solutions"; and many others.

Copies of all American Standards are available from The American Standards Association, Inc., 70 East Forty-fifth Street, New York 17, New York, and information about ASA Standards or PSA Standards work is available from your Divisional PSA Standards Committee member whose name is listed below.

Your comments or questions on existing standards, and proposals of the subjects that would benefit by standardization will be greatly appreciated and will contribute to the advancement of both the ASA and PSA standardization programs. In the last analysis your personal utilization of, and benefits from, these standardization programs are the only justification for their continuance and it is our hope that this reminder will encourage you to take advantage of these standards data which can do so much to enhance your pleasure and success in photography.

PSA STANDARDS COMMITTEE

John M. Centa, *Chairman*

Divisional Representatives
Pictorial—Ralph Mahon, APSA
Color—John Moddejonge, APSA
Nature—Arthur Underwood, FPSA
Photo-Journalism—Robert Beer, APSA

Technical Sections Representatives
Boston—R. W. St. Clair, APSA
Binghamton—Ira Current
Cleveland—C. D. Spencer
New York—Harry Lerner, APSA
Rochester—Silas Thronson

PSA Representative on ASA Committee Z22 (Motion Pictures)
Allen Stimson, APSA

PSA Representatives on ASA Committee Z38 (Still Photography)
John R. Weber
Lloyd E. Varden, FPSA
Fred Quellmalz, Jr., Hon. PSA, APSA (Alternate)

CONVENTION HIGHLIGHT

Fri., Oct. 20th — A.M. & P.M.

Want to know more about cameras, equipment, procedures, materials, color photography? Then be sure to attend the clinics Friday morning on black and white with John McFarlane, FPSA, as moderator, and Friday afternoon on color with H. Clyde Carlton, APSA, presiding over the experts.

DON'T MISS IT!

IRIS

Harold L. Kirkpatrick

From The Fourteenth Annual Kodak International

THE FOLIO Volume 3, Number 10

Devoted to News of the Pictorial Division of the Photographic Society of America

What's in a Name?

STELLA JENKS

Shakespeare said, "A rose by any other name would smell as sweet." But the question here is, would "*The Folio*" by any other name be more widely read?

When *The Folio* was started by Ray Miess three years ago, it was intended to convey news of the portfolio circle members, and the name, "*The Folio*," described it perfectly.

But as the activities and services of the Pictorial Division increased and expanded, their news too has been added to *The Folio*, and it has now become the official news outlet of the Pictorial Division.

We know that all of our Pictorial Division members of long standing always read *The Folio*, but unfortunately, there are some of our newer members who haven't realized that this section of PSA JOURNAL is devoted entirely to news of all the Pictorial Division activities for both individuals and clubs, and is written entirely *by* PD members *for* PD members. Many of them are misled by the name, and feel it is devoted only to portfolio activities.

So — what's in a name? We want to find out. We want a new name for this section, one which will convey to all readers that this *is* the official news outlet for the Pictorial Division and all of its many activities. All members of the PD are eligible to compete in suggesting a new name, and the person suggesting the name chosen will be given one years PSA and PD dues as a prize (officers and directors, of course, are not eligible for the prize).

Send in your suggestion for a name to replace *The Folio*. This contest will close on December 31st, and the winner will be announced in the March issue. Pictorial Division members may submit as many names as they desire, and in case of a tie, duplicate awards will be made.

Send your suggestions to Stella Jenks, Editor of *The Folio*. You need not write a fancy letter, just send me a postcard saying, "My suggestion for a name to replace *The Folio* is . . ." Be sure to sign your name and address.

What's in a name? Think about it, and make your suggestion before December 31st. YOU may win the prize!

* * * * * *

With this issue of PSA JOURNAL, the Pictorial Division proudly presents its first Supplement. All of the articles are outstanding and deserve the careful attention of photographers who wish to improve their work. While many people devoted considerable time to the Supplement, special thanks are due to W. Dovel LeSage and Doris Martha Weber, APSA.

DR. C. F. COCHRAN, *Associate Editor*

How many of us ever look at the express receipt after it is turned over to us when the expressman picks up a portfolio? I venture to say that this is not done once in a thousand times—yet it is very important. The first thought should be to check the consignee as shown on the receipt. The express company does make mistakes and when they do some one is frequently deprived of the portfolio on that round, unless the mistake is caught in time.

These thoughts are prompted by the fact that two members have thus suffered in the past few weeks. In each case, the expressman in making up the receipt erred by showing Portfolio Headquarters as the consignee instead of the shipper. The actual consignee was then shown as the shipper. Then, in order to rectify his error he changed the label by changing "FROM" to read "TO" and "TO" to read "FROM." Result, the portfolio comes into Chicago and a member misses out on a visit with the portfolio which he had been looking forward to for some months. Frequently this error is detected and rectified, with additional expense for expressage thrown upon Portfolio Headquarters. This error could not occur if you would carefully check the express receipt before the expressman leaves with the portfolio.

Comments

For close on to six years we have been watching the work of the members in the various portfolios, many of whom have been in the activity since its inception. It is gratifying indeed to watch the steady improvement being made by the serious workers and to see many go on to enviable salon records. The serious worker is bound to improve both technically and pictorially thru his work in the portfolios.

On the other hand, the worker who relies on the comments of others to form his comments on the print on which he is working—the chap who says "I agree with what the others have said" does not advance very rapidly, if at all, and before long, he drops by the wayside.

To get the most out of your portfolio enrollment you should make your comments upon all the prints before referring to the comments made by others. Let your comments be your own, not a re-hash of what someone else has said. To read the comments of others and then to make your comments based upon what others have said before you is like cheating yourself at a game of Solitaire. After you have made your comments then go back and read what the other members have said. If you wish at that time to make further comments upon any print, prefix these additional comments by saying "after reading the comments of others." If you follow this rule and are serious in your efforts to advance, you will do so.

Renewal Notices

Each month we spend several evenings and possibly a full Sunday in going thru the master cards and sending out renewal notices. Nothing else can be handled during this period, and everything else must pile up until the renewals have all gone out. We spend more time on this than we should for many members require two or three notices before they will mail in their portfolio renewals. In the future, we will send out but three renewal notices to a member, after that he will be dropped and the portfolio will by-pass him. So, when you get a notice, will you please cooperate by sending in your renewal promptly, thus avoiding the necessity of the extra work caused by additional notices. If you are prompted to write in and say that your portfolio renewal was included with your PSA renewal sent to Philadelphia, hold up that letter and turn to page 172 in the April 1950 JOURNAL. It will save you the work of writing letters and will also save us the work of writing in reply.

Portfolio Schedules

It is gratifying to note that more and more of the portfolios are travelling on schedule or only a few days behind time, which shows that it can be done. Our hat is off to genial Doc Cochran, Sect'y., PSA Pictorial Portfolio # 36, also to the members of that circle. They brought their portfolio thru on schedule when they had every good reason to come in late. This portfolio was the first one to travel to Hawaii and back. It was a tight schedule as Doc had allowed but ten days to Hawaii from California and but ten days back from Hawaii to Washington State, yet the portfolio came in on time.

If it can be done in that circle it can be done in others. The whole secret is the complete cooperation of every member. This portfolio travelled back and forth across the U. S. before going overseas to Hawaii, and then covered two-thirds of the distance across the U. S. before it came back to Chicago. My guess is that all members of the group had prints ready

and waiting when the portfolio reached them and there was no hasty digging in the pile of discards or delaying the portfolio while a print was run thru for the caliber of the prints on the round just completed was well above par.

Membership Drive

Our hat is off to Herb Jackson, of Signal Mountain, Tenn., for the large number of new members that he has been obtaining for PSA and the portfolios. He is establishing an enviable record in a not too heavily populated area. As soon as Herb has sent a new enrollment to Philadelphia, he notifies Portfolio Headquarters so that the member can receive an invitation to come into the portfolios without delay. His principal sales tool in building up the PSA enrollments is the PSA American Portfolios.

What Herb is doing, you too can do — and you will benefit by the awards being made for new PSA members. Join in the game — build up membership in your Society — and at the same time gather in the awards that are awaiting you for all new members that you secure during the Drive of Champions — and also bring these new members into the portfolios.

F. R. CHRISTHILF, APSA, Hon. PSA

Portfolio Medal Award

Lincoln, Nebraska has come up with a second winner of a Portfolio Medal. This time the Award goes to Stanley D. Sohl, of Lincoln. His print, "Gears and Cogs," which has travelled in Pictorial Portfolio # 55 was accepted and hung in the PSA International Exhibition of Photography 1949. In writing about his print Mr. Sohl says, in part:

"'Gears and Cogs' was taken in the Journalism Department Photographic Laboratory at the University of Nebraska. At that time I was a lab instructor. I saw the gears and spent one afternoon trying different compositional effects and studying the relations of texture on a hard surface against the softness of black felt.

"The negative was shot on a 4 x 5 Speed Graphic, using Super Panchro-Press Type B film. The print was on Defender DS and was waxed.

"In the past few months the print has also hung in the Kalamazoo International, The Seattle International, and the Philadelphia International Salons.

"There is no doubt in my mind that conscientious work in the portfolios will help bring one's prints out of the class of ordinary."

The fall exhibition season is now in full swing. If you have never had a print accepted and hung in a recognized International, you are eligible to compete for the PSA Portfolio Medal Award.

Notes from the Notebook

In running thru the various portfolios and studying the prints, the fact is evident that many need information on toning. Many of the prints are violently toned — overtoned. Others are dyed an ungodly hue. Way back in the dim past at the end of the first circuit of Portfolio # 11, there was a notebook entry by Adolf Fassbender, Hon. FPSA, who was at the time Commentator on Pictorial Portfolio # 11. This, we feel, is excellent material for our notebook quote this month.

Mr. Fassbender wrote:

"My advice to all participants in the portfolio is to take a broad view on all individual comments, which are without a doubt, very sincere. Contradictions may appear, but if you group all comments on your prints together you will find that most of the real faults are brought to the fore by a majority of similar suggestions.

"The purpose of the portfolio is to give help technically and artistically to the participants. I believe that there are a few in the group who do not realize this fact. When I read the data requested on the front of each print folder and find that some member may answer the last question, 'Special Help Required,' by writing 'NONE,' I feel somewhat reluctant to offer any suggestions. It may be that this question is misunderstood by the member."

The request for blue toners and the comments on same by Edward Howell are, no doubt, of general interest. In introducing and popularizing blue toners in connection with chloride and chlorobromide papers to professional photographers about twenty-five years ago, I found later that many workers encountered troubles with the use of the dangerous solution of sulphuric acid and therefore introduced the simpler and safer formula which was printed in my article in *American Photography* years ago. The formula follows:

SOLUTION # 1	Water	8 ozs.
	Thiocarbamide or Thiourea	50 grains
SOLUTION # 2	Water	8 ozs.
	Citric Acid	50 grains
SOLUTION # 3	Water	8 ozs.
	Chloride of Gold	15½ grains (1 gram tube.)
For use mix		
	Water	10 ozs.
	Solution # 1	1 oz.
	Solution # 2	1 oz.
	Solution # 3	1 oz.

The solutions keep in stock but not when mixed. Slight intensification will take place during toning.

Toning time: 10 to 20 minutes for chlorobromide papers. Straight bromide papers will not tone for a very long time, possibly not at all. The mixed solution given above will tone two 11 x 14 low key pictures or three 11 x 14 high key pictures.

Recorded Lectures Now Available

The Pictorial Division is happy to announce a new activity. There is available to camera clubs which are members of PSA a new type of program which shows promise of being of great benefit to club members throughout the country, especially in smaller localities.

These programs consist of tape recordings of some of the finest photographic talent in the country, with more names being added to the list as fast as production will permit. Each lecture will be illustrated by standard size, 2 x 2 inch, black-and-white slides. The tape is standard "home recording" type which plays at 3¾ inches per second, and was recorded on an ordinary Revere Tape Recorder.

The Recorded Lectures will be available to any club which holds membership in PSA. There is no "rental fee" but a service charge will have to be made to partially defray the expense of production and distribution of these programs. The exact amount has not been determined but it will be nominal. As in the case of the portfolios and the other activities of the Pictorial Division, no effort will be made to show a profit.

Variety of Subjects Available

A variety of lectures have been recorded at the time this is written and it is anticipated that the list wil be larger very shortly. The lectures available will be announced at the Baltimore Convention and releases will be publicized in a new department of *The Folio* each month, complete with a description of the lecture and information regarding the speaker.

The next issue of PSA JOURNAL will carry the first description. A complete list will be mailed to your secretary or program chairman upon request. With this list there will be complete instructions for securing the use of the Recorded Lectures.

Requests for information should be addressed to Dr. C. F. Cochran, Director, PSA Pictorial Division Recorded Lectures, 3946 N. Lawndale Ave., Chicago 18, Illinois.

New Service Fills Need

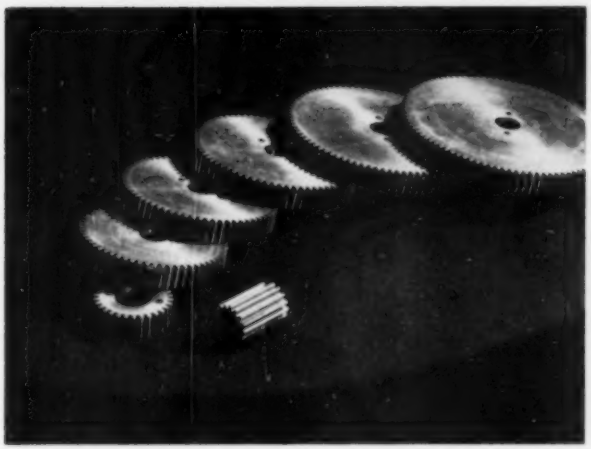
Perhaps the one thing which contributes to the success of a camera club more than anything else is good programs, and conversely, the greatest threat to the life of a club is their lack. This is especially true of the small town club. In the smaller communities the local expert or two will provide several programs a year and then the club is faced with speakerless meetings or

CONVENTION HIGHLIGHT

Wed., Oct. 18th — 7:30 P.M.

Formal opening of the PSA 1950 Show — with appropriate ceremonies. Accepted pictorial prints in an art gallery exhibition. Showing of color transparencies selected by jury. Prints of technical subjects — prints in full color. Presentation of 1950 Progress Award Medal.

DON'T MISS IT!



GEARS AND COGS — Stanley D. Sohl

the expensive alternative of paying the expenses of some out of town speaker. Location can make this almost prohibitive for more than one or two meetings a year.

Now, at relatively no expense, many of the best speakers in the photographic fraternity can address your club on a date to suit your convenience, and you may view their pictures, or pictures of their selection, through the medium of the slides which accompany each program.

From a small beginning of what seemed at the time to be a fairly good idea, this activity has met with increasing enthusiasm as the implications became more and more apparent. The committee and the officials of the Division are convinced that the Recorded Lecture Program can become one of the really big things in photography. The tremendous success of the portfolios indicates the need of the isolated workers in photography for assistance in all of its phases. It is hoped that the program, as set up, will offer to clubs the same help, encouragement, and pleasant associations which the portfolios have offered to the individual.

Effort has been made to make these Recorded Lectures easily available. All that is needed for you to use one of these at a meeting is that your club belong to PSA, that you have a slide projector, and that you have or can secure the use of a recorder. If a recorder is not available within your club, your local camera dealer will, in most cases, supply a recorder for your program in exchange for the opportunity of making the demonstration and as a gesture of good will.

Your Help Is Solicited

Please understand that in pioneering this type of activity we are not pretending to offer the perfect program. We sincerely believe that the programs which we have to date are tops in quality, the best available for an instructive and entertaining meeting. But you are the audience. You are our "customers." It is you in the last analysis whom we must please and it is for you that these programs are produced.

It is from the suggestions and criticisms of the clubs who use these facilities that better programs will be made. Frankly, it is a big job we have on our hands, and your suggestions, criticisms, help, and perhaps even your encouragement will always be welcome.

Some will recall that, as associate editor of the American Portfolio department of *The Folio*, I said that I considered each of you as an Assistant Editor. Your assistance has been invaluable. Please continue.

DOC C. F. COCHRAN

PSA International Exhibits

DR. GLENN ADAMS, *Associate Editor*

The service charge of $3.00 which camera clubs have been asked to pay for each foreign exhibit has now been abolished, and aside from the express charge each way, all the lovely foreign exhibits are now sent free to PSA clubs.

The following foreign exhibits are now available and with most clubs becoming increasingly active as cooler weather sets in, now is the time to schedule some of these foreign shows for exhibition.

The Francis Wu Show: This One-Man Exhibit from the studio of Francis Wu, FPSA, shows what lovely technique and striking imagination can come from an Oriental photographer. Mr. Wu is founder and editor of the new Hongkong photographic journal, *Chinese Photography*, which exhibits the best work of Chinese photographers both in black and white and color each month. The PSA welcomes this magazine and wishes it the greatest success.

The Cuban Show: This show, assembled some time ago by Angel De Moya, APSA, has had wide circulation in the United States and will shortly be returned to Cuba in exchange for another exhibit. All clubs should see the unusual work of Cuban photographers.

The Italian Show: This show, choice of all Italian pictorialists, is new in the United States and was exchanged with the Southern California Council of Camera Clubs. It has now completed the Southern California circuit and is available for other clubs throughout the country. This show was assembled in Italy under the auspices of the Federazione Italiana Associazioni Fotografiche, Torino, Italy, Renato Fioravanti, FIAP, Secretary, and Dr. Ing. Italio Bertoglio, Chairman. M. M. Deaderick, APSA, acted for the Southern California group in assembling their show and word comes from Italy that it is touring all the large cities with great success. This Italian show should be seen by all American pictorialists and reservations are in order.

The Swedish Show: A lovely show from this country is now touring the United States and is available to all clubs. It is from the Kungsbacka Camera Club and was assembled by K. Lindenberg, the Swedish Interim Secretary of the PSA International Exhibits. An American Invitational Show was sent to Sweden in exchange.

The Hongkong Show: This exhibit came from Hongkong, China, and represents the best work of the many enterprising pictorialists in that great Chinese city. It will be sent back to China at the end of this year so do not miss seeing it.

The Robertson Australian Show: This Australian One-Man show, assembled by Keast Burke, editor of the *Australian Photographic Review*, is the work of E. Robertson, and is largely portraiture.

Australian Show # 3: This exhibit has just arrived from Mr. Keast Burke and is available for immediate circulation. The show comprising more than 50 prints has been divided into two groups because of postal restrictions and is being designated as Australian Show # 3A and Australian Show # 3B.

The Royal Show has been returned to the Royal Photographic Society in England, and it may be some time before the PSA receives another exhibit from this country. Dr. J. Dudley Johnston, Curator of the RPS, can be quoted as follows: "Materials and especially paper are scarce and high prices curtail photographic activities. You see, we are at present a poor people and the Government puts a 66% tax on photographic materials which makes the practice of photography as a hobby, a matter of luxury."

All Camera Club Associations are urgently requested to write the Director of International Exhibits for particulars concerning the assembling of a show to be exchanged with a foreign country. United States shows are badly needed.

The International Portfolios

DR. WILLIAM F. SMALL, *Associate Editor*

Portfolio Targets

A few days ago one of the portfolios arrived. As often happens a couple of the boys of the Camera Club were holding forth in the back room and they lit on the "box." They tore the prints apart—even more than the Commentator did. "Don't you have to do better than that to be in a PSA portfolio?" "I can do as good as that myself." "If I had that model what I could do with her." These were just a few of the many comments that flew thick and fast. Of course, some of the comments were just and some a little unjust. One man's opinion is not always the same as another's, but the consensus was that you didn't have to be so "hot" an amateur photographer to be in PSA or in a portfolio.

This gave me the chance I had been waiting for and I went after these men good and plenty. I tried to sell them PSA and portfolios and maybe a grain or two fell on some good earth. Time will tell.

The one thought that stayed with me after I had given these chaps my sales talk and they had gone was: "Are we putting our best work in the portfolios, or are we slipping in any old print with the hope that it will get by?"

No one can expect to make an exhibition print every time he or she takes a picture. Composition, subject matter or one's handling of the subject matter may be open for criticism, which is the reason why we join portfolios. We want suggestions for improving our work. One part of our work, however, can always measure up to exhibition standards—the condition of our finished print. This is a result of cleanliness and care—cleanliness in the darkroom so that our negatives and prints will have no spots or scratches on them; care in cropping to have the edges straight and the corners square; care in spotting and waxing. This gives the Commentator and the members of the portfolio something to talk about besides "I like" or "I don't like."

It only takes a moment or two to finish a print properly and a well made print gives the maker a lift as well as a mark at which the fellow members can shoot. Someone once told me: "If you want people to think you are a good photographer, show them only your good prints, never the bad ones."

Note in the next portfolio you get, especially if it is a foreign one, how nicely the work is presented for your approval. If you are in an All-American group don't just envy the other chap. Try to beat him out. Push that darkroom technique a little harder. Throw the poor prints in the trash box and send the good ones out. A little practice will keep the trash box empty and your files for future portfolios filled.

News and Notes

Keast Burke, from down Australia way, sends us some clippings from "The Last Page," a photographic publication for our friends from "down under." And though the news may be a bit old, we find that all the PSA members are actively engaged in spreading photographic information to their clubs and organizations.

Keast judged the Maitland show and the Argonauts Photographic Competitions.

J. P. Carney is the first Australian to receive the Award of Merit given by the PSA Pictorial Division. He also won a Certificate of Merit for his "Fig Trees" in the Melbourne CC.

Edgar Rouse was one of the speakers at a banquet in Rochester, telling of photography in Australia and showing some of the prints in the new portfolios now making the rounds in the States.

C. B. Young and Ainslie Roberts, both PSAers, will be two of the judges for the coming 16TH Kodak Salon of Photography (for Kodak staff members throughout the world) which this year is being organized in Australia.

From a letter written by Dhruva Engineer in India, we learn of a recent death there. He writes, "You will be sorry to know that A. C. Deverajulu, Secretary of the Third India-American Portfolio died on the 19th of February after a serious illness of two months. In his passing, we lost an enthusiast and a well-versed Secretary of the I-A Portfolio activity."

HIGHLIGHTS FROM

Portrait Portfolios

PAUL J. WOLFE, *Associate Editor*

If there are any Portrait Portfolio members who are not regularly receiving their copy of *Portrait Pointers*, edited by Maurice H. Louis, they are requested to write the director. If you are not a member of the Portrait Portfolios and would like to receive this valuable bulletin on portraits, send fifty cents to Maurice H. Louis, Editor, 333 West 56th St., New York 19, N. Y.

Applause to John O. (Jack) Hay, Commentator for No. 10, for his excellent criticisms and assistance to his group. From Jack's typewriter we read: "If the man is interested in commercial portraiture, his picture is excellent if it truthfully portrays the subject so that his family and friends will feel that they must have it to the extent of a few more sheckles. In our criticisms we want to try to take into account that some are interested in commercial portraits and others in the more pictorial type."

Jim Krebs, of Portfolio No. 9, has an interesting set of rules which he attempts to apply to his work for better portraits. They are: (1) It is our job to control the thoughts of the sitter to make better expression. (2) Try for roundness and atmosphere in lighting. (3) Make sure the arrangement or composition is pleasing. (4) Study the craft of the best workers and get print quality. If we'd all take time to think about these four rules before jumping haphazardly into making a portrait, our photography would improve a lot.

Formula by Harry Ittner, Commentator for No. 7, on how to relax a lady: "Get into conversation with your subject, on something that interests her. Snap the shutter while you are talking. If that doesn't work feed her Martinis!" Perhaps a couple Martinis fed to the photographer would aid the conversation, too.

Comes this sage advice from Kent W. Barthett, Glendale, Calif.: "Regarding gripes on delays: If every one would record his receiving and shipping date as they are supposed to, the place of delay trouble would soon show up." And he adds, "Hit 68 years old, and 45 wedded years last month." Our congratulations on the sixty-eight years, Kent, but what do you want us to do about the forty-five?

A common fault in portraiture is having too much light on the forehead, particularly with men. Remedy: With an oval cardboard cut about three inches long, this part of the face may easily be dodged in.

Belle McMillen, 726 Community St., Lansing, Mich., of Portfolio No. 7 asks five questions in the notebook. How about some of you sending her the answers. (1) Am I in the wrong circle? (2) Were the professionals disappointed when they found there were amateurs in it, too? (3) What does the amateur offer the professional? (4) Does the professional LOVE photography well enough to be ready to lend a hand to a struggling fellow member who is less fortunate? (5) Will we all be professionals bye and bye?

George J. Munz, 37 Homestead Place, Bergenfield, N. J., has been appointed Circle Secretary for Portrait Portfolio No. 8. Send him arrival and shipping cards promply. Help him keep No. 8 on schedule.

Concerning the use of texture screens by Frank R. Henningsen of Ocala, Florida, Carl Sanchez, Jr., advises: "Screens are quite alright where they add a subtle touch, but where they dominate then they become bothersome and objectionable." He says that they should not be too coarse for the size of the print, that, ". . . it should subordinate itself so we are not conscious of it."

Why do so many apologize for the portrait they enter in their Portrait Portfolio? There has never been a perfect portrait nor is there ever likely to be one. If you are a beginner, your print will show it. How can you expect the first print to equal that of the professional in your portfolio who has probably been making them for years, nine or more hours a day? Give yourself a chance, keep after it—it will not be long before you'll equal or better

the professional. You don't have to apologize for your firsts in any portfolio.

All Pictorial Division members are welcome to join our Portrait Portfolio family. Write for information to Paul J. Wolfe, Director, PSA Portrait Portfolios, 124 E. Jefferson St., Butler, Pa.

LYNNE PASCHALL, *Associate Editor*

It is with pleasure that I announce the appointment of Lynne Paschall as the new Associate Editor of the Camera Club Activities column. He has done an excellent job of editing the "Shutter Snapper" for the Troy (Ohio) Camera Club for several years, does excellent photographic work himself, and will, I know, endear himself to the readers of this column through his friendly, humorous style.—S. J.

"It Satisfies"

A couple of generations ago the following paragraphs would have been labeled a testimonial—actually that is what they are. A testimonial of how the PSA solved the annual headache of a camera club.

In the smaller cities and towns, the procurement of judges for a club's annual exhibit is a spectre which haunts, for the greater portion of the year, the waking moments of the club's officers. To get judges who know photography, at least the rudiments of art, etc., is not an easy job. And to find judges whose qualifications are approved by the larger percentage of the members is an even harder assignment.

Consequently, when one of the Directors of the Topeka Camera Club Board suggested that we try out the PSA Judging Service, he was hailed as a hero coming forth at a time of duress. Within a week after our letter of inquiry was posted, a reply giving full instructions as to our course of action was received from Dovel Le Sage, Director of the CC Judging Service.

Our judge was W. E. "Gene" Chase, APSA, who called in, just for good measure, Jane Shaffer, APSA, and Fred Kirby. Mr. Chase asked if we had access to a wire recorder and we did have. The judges then not only chose the award winners but made a very informal recording of why they picked those 13 prints (our club is not superstitious), what the trio liked or did not like about the prints, and how they might have been bettered.

Following our annual Spring shows it is our custom to have a "criticism meeting"—criticisms offered by the judges if possible, if not, the members turn critics. It would be superfluous to tell that this year's criticism night, with the wire recording as the main feature, was one of the most successful meetings we have had.

The officers of the club have discarded all their headache tablets, have forgotten how to frown in puzzled and harried concentration, and are no longer worried about sprouting an extra crop of gray hairs in the Spring. And the members are concentrating on making better prints so that they might be good enough to "snag" one or more of those PSA stickers which the Judging Service gives to the award winners.

We are not trying to step on the toes of a well known cigarette company's publicity writer when we say of the PSA Judging Service, "It satisfies," but we do urge clubs to take advantage of this escape from worry and discontentment. As for the Topeka CC—we're going to ask the same favor of the Society next year.—CHARLOTTE KESSLER, Secy., Topeka (Kansas) Camera Club.

If your club is interested in using the PSA Judging Service for its print competitions, contact W. Dovel LeSage, Director, for complete information.

Attention Club Program Chairmen!

In the August issue of THE FOLIO, we outlined the Pictorial Division services available to clubs, but since that time, the Division has added another excellent service. The first announcement of the Recorded Lectures is found elsewhere in this issue.

Here is a program suggestion you can't afford to pass up! Contact Dr. Cochran for full particulars and insure a successful program for your club this year without large expense.

MISS CHARLOTTE KESSLER, *Associate Editor*

Have you ever had the experience (and who hasn't) of having the experts at your club meeting comment on your print and say, "This is just another snapshot," or make some other statement just about as uncomplimentary without specifically pointing out what is wrong with the picture and how it could be improved? I am sure this has happened many times in camera clubs throughout the country, and this type of comment does considerably more harm than good.

Under the Print Analysis Service a report is rendered giving a specific valuation of your print as to subject interest, originality and impact, emphasis on center of interest, compositional design, arrangement of materials, sharpness, lighting used, cropping selected, print quality, choice of paper, toning (if any), spotting, ferrotyping, varnishing, choice of title, intention accomplished for purpose desired; and in addition comments are made on each of these points when the valuation is less than good. At the bottom of the report a general summarization is made of the print as a whole.

Where a worker is trying to present a certain type of subject material, and the print submitted needs considerable improvement, reproductions of successful salon pictures which have been made by others, and taken from salon catalogues are furnished whenever possible. This will help to guide the worker toward making a worthwhile presentation of the chosen subject material.

A number of replies have been received from those who have taken advantage of the Personalized Print Analysis Service, and it is gratifying to know that the efforts of those working on this project are sincerely appreciated by the members of the Pictorial Division.

Prints may be submitted by any member of the PD in accordance with the rules which have been previously set forth. Send prints to J. Elwood Armstrong, APSA, 17402 Monica, Detroit 21, Michigan.

Star Exhibitors

New PSA Star Exhibitors and advances in rating since the last published listing are as follows:

New 1-Star Exhibitors

Joe E. Kennedy	Tulsa, Oklahoma
E. B. Sigler	Rock Island, Ill.
Charles N. Chambers	Calcutta, India

Advanced from 1-Star to 2-Star

Walter V. McKee	Pelham Manor, N. Y.
Charles H. Tipple	Oneonta, N. Y.
Richard C. Cartwright	Milton, Mass.

Advanced from 3-Star to 4-Star

Dr. Carroll C. Turner, APSA	Memphis, Tenn.

Applications for Star Exhibitor Award of Merit Certificates should be addressed to Warren W. Lewis, Director of the Award of Merit, 2055 North Sedgwick Street, Chicago 14, Ill.

Salon Practices Questionnaire

RALPH L. MAHON, APSA

Most exhibitors and salon chairmen are in agreement that numerous salon practices need revising but few have the inclination to do much about it except to criticize such exhibitions and those who conduct them. Realizing the hazards involved and to check his own conclusions (based on nine years' experience as an exhibitor and active member of the Chicago International Photographic Exhibition), Director Ralph L. Mahon, APSA, prepared a five-page questionnaire and mailed them in December 1949 to 33 representative salon chairmen and 45 exhibitors located in all sections of North America. The response was heartening. At the time this was written, completed questionnaires had been received

from 23 chairmen and 31 exhibitors and summarizations had been prepared on the first four sections for publication in the summer and early fall issues of *The Folio*. We now come to the summarization of Sections Five and Six, "Salon Practices Procedures" and "Miscellaneous Comments."

Salon Practices Procedures

All 23 salon chairmen answering the questionnaire indicated that they were familiar with the booklet prepared and issued by the Pictorial Division in 1945, entitled "How to Organize and Conduct a Photographic Salon." Twenty stated that their salon adheres as closely as possible to its recommended procedures. Nine felt that it needed a major revision, four thought it needed a minor revision and two went as far as "perhaps" on the need for a revision at this time. The items most frequently mentioned included the print box, records, salon dates and conflicts and the need for a combined booklet to cover PSA recommendations with respect to color prints and slides as well as monochrome prints. Fees were not mentioned at this point, having been fully covered in Section I. Twenty-three of the exhibitors responding to the questionnaire were aware of the Pictorial Division booklet, but only 13 admitted a "speaking" familiarity with its procedures. Six had a vague idea of the booklet's recommendations.

Familiarity with the recommendations of the *American Annual* were even less numerous. Fifteen chairmen were familiar with its rules, with two more "vaguely" qualifying. Similar figures for the exhibitors were 16 and three respectively. Items most frequently mentioned concerning their rules included that regarding cash prizes, their treatment of salons and those who conduct them "as a business," their tendency to encourage quantity rather than quality and their insistence on 125 acceptances for a salon's recognition.

There was general agreement among both chairmen and exhibitors that PSA and the Pictorial Division should take the lead in the establishment of recommended salon practices. Enforcement was another matter. Only four of the 23 chairmen, however, thought there should be no enforcement action. Their variations ranged from the licensing of salons (and judges) to withholding approval or failure to recognize individual salons. The listing of approved salons was the most popular specific enforcement recommendation of both chairmen and exhibitors (four votes by chairmen and five by exhibitors). Helpfulness, rather than dictatorial procedures, were thought desirable by both groups.

In answer to the question, "Should PSA establish its own exhibitors' list based on two or more acceptances in salons following PSA recommended practices?" Fifteen chairmen voted "yes" and three others gave their qualified approval. Similar figures for exhibitors were, 16 and one respectively. Seven exhibitors thought this job should be left to the *American Annual*. Eighteen exhibitors indicated they would be satisfied with such a list (names and addresses with number of salons with acceptances and prints hung — without accessories) if it appeared in the JOURNAL at the end of each salon year. Five others agreed to it with qualifications. The possible inclusion of unsuccessful exhibitors in such a list was outvoted by the chairmen, 12 to 10 with one chairman failing to make a statement. Fourteen chairmen indicated that they would use such a list for entry form mailing purposes, with four more giving qualified approval.

General Comment

The only general comment affecting entry fees and salon finances was contributed by one of the chairmen, who suggested that the new procedures make it as easy as possible for contributors to participate in salon competition. He felt that it was desirable to lose a few salons if necessary, rather than take salons out of the reach of the average camera enthusiast. One exhibitor suggested a reduction to two prints per entry to save the dollar entry fee.

There were no general suggestions affecting salon dates and time intervals.

Juries and judging procedures came in for several suggestions, especially from exhibitors. Two thought highly of the two-jury system because it minimizes the effect of personal prejudice, thereby giving exhibitors "a break." Another recommended the system tried out at Minneapolis in 1949, giving points for specific items and basing final acceptance on total points. With respect to the jury itself, one exhibitor recommended the use of three competent judges rather than two with one "unknown," while one chairman was equally insistent that the use of one new man on each jury was essential training for the ultimate good of pictorial photography. One exhibitor favored the greater use of local jurors to get fresh viewpoints and more variety in exhibitions. One chairman recommended that jurors be instructed to judge prints on their merits, eliminating personal preferences as nearly as possible. One exhibitor had the same feeling, believing that a well-balanced salon should include all kinds of pictures (processes and subject matter). One exhibitor called attention to the wide disregard of the rule calling for the judging of small and unmounted prints before the 14 x 17 and 16 x 20 prints of domestic pictorialists. One exhibitor who has served from time to time as a judge called attention to the need for instructions to salon committees regarding the proper treatment of visiting judges.

With respect to the catalog, one exhibitor recommended the revision of the process designation for individual accepted prints to indicate the character of the toning, etc. One chairman thought that where a salon had color slides as well as monochrome prints, there should be illustrations of slides (not necessarily in color) as well as prints. One exhibitor thought the cost of catalogs might be kept down by the more general use of cuts of currently successful salon prints in the photographic magazines, thus reducing the number in each catalog and limiting them to reproductions of "new" prints. Another believed that a system of merits and awards would do much to encourage the exhibition of superior prints.

On the exhibition itself, one exhibitor recommended more local publicity as a means of stimulating public interest and attendance.

On the routine operations connected with the judging and handling of prints, one exhibitor complained that some salons are slow in mailing notification cards and in returning prints. Two complained about the careless job some committees do in repacking prints for return to their makers or delivery to another salon. One was inclined to quit exhibiting altogether upon receipt of a cardboard mailer instead of the $5.00 mailing case originally shipped to the salon involved. One pointed out the need for the development and manufacture in quantity of a good, inexpensive, light weight shipping case or carton.

With respect to salon practices, several suggested the need for keeping salon standards high and shifting the emphasis from "quantity" to "quality." Several chairmen suggested the development and printing of standard entry forms, leaving space for local names, addresses, etc. Other chairmen were having trouble with customs, duties and related procedures. Several exhibitors pointed out that the running of a salon is a business in itself and that the committees involved should be headed by business men. Most closed with the feeling that salons are generally pretty well conducted despite their voluntary help and their failure in some instances to follow all of the existing rules.

In conclusion, the Director is now engaged in the revision of the rules covering Pictorial Division recommendations for the conduct of monochrome salons. When these have been formulated, they will be submitted to some of the chairmen and exhibitors who answered questionnaires for testing. The next step will involve approval by PSA officers, followed by publication and distribution. Inasmuch as revisions can be made up to the date of final approval, suggestions are welcome and may be mailed at any time to me at 260 Forest Avenue, Elmhurst, Illinois.

Coming Salons Agreeing to Follow PSA Recommendations

NOTE: M—monochrome prints, C—color prints, T—color transparencies, SS—stereo slides, L—monochrome slides, A—architectural prints, S—scientific or nature prints. Entry fee is $1.00 in each class unless otherwise specified. Recognition: The monochrome portions of salons listed have Pictorial Division approval. Check salon list of appropriate Division for recognition of other sections.

Dublin (M) Exhibited Oct 23-Nov 5 in Dawson Hall. Data: Exhibition Secy., 11 Hume St., Dublin, Ireland.

PSA (M,C,T,N,S and MP) Prints exhibited Oct 15-Nov 1 at Baltimore Museum of Art; Slides projected at Museum Oct 18; Slides and motion pictures projected at convention hdqtrs., Oct 18-21.

Pasadena (M,T) Exhibited Oct 9-28 at Bullocks Pasadena.

Victoria (M,T) Closes Oct 5. Exhibited Nov 5-12 at Empress Hotel. Data: Irvine Dawson, 680 Victoria Ave., Victoria, B.C., Canada.

Chicago (M) Closes Oct 7. Exhibited Oct 28 to Nov 26 at Museum of Science and Industry.

Data: Mrs. Loren M. Root, Room 2320, 135 S. LaSalle St., Chicago 3, Illinois.

Evansville (M) Closes Oct 8. Exhibited Oct 22 to Nov 4 at Fine Arts Camera Club. Data: Richard A. Levi, 1405 E. Park Drive, Evansville 13, Ind.

Columbus (M,T) Closes Oct 9. Exhibited Oct 22 through Nov 4. Data: Fred H. Braulin, 456 Elsmere St., Columbus 6, Ohio.

Santiago (M,T) Closes Oct 10. Exhibited Nov 7 to Dec 8 at Palacio de la Alhambra. Entry forms from R. L. Mahon, 260 Forest Ave., Elmhurst, Ill. Data: Club Fotografico de Chile, Huerfanos 1223-2, Piso, Santiago, Chile.

Ariz. State Fair (M,C,T) Closes Oct 19. Exhibited Nov 3-12. No entry fee but entries will be returned express collect unless return postage is rec. Data: Dept. of Fine Arts, Photographic Section, Ariz. State Fair, Phoenix, Ariz.

Miss. Valley (M,C,T) Closes Oct 25. M and C exhibited Nov 5-20 at City Art Museum; T Nov 6 and 13 at Museum and Nov 1 at Calanne Branch Library. Data: Noel F. Delporte, 586 Stratford Ave., St. Louis 5, Mo.

Canberra (M) Closes Dec 2. Exhibited Jan 24-31. Data: Secy, Canberra Photographic Society, City P.O., Canberra, Australia.

Springfield (M) Closes Dec 4. Exhibited Jan 2-21 at Art Museum. Data: Miss Louise Lachridge, Geo. Walter Vincent Smith Art Museum, Springfield 5, Mass.

Cuban (M,T) Closes Dec 5. Exhibited Dec 15-Jan 15 in club gallery. Data: Club Fotografico de Cuba, O'Reilly y Compostela, altos, Havana, Cuba.

Des Moines (M,C) Closes Dec 9. Entry fee $2.00. Exhibited Jan 1-21 at YMCA and Art Center. Data: Rodney Q. Selby, YMCA Building, Des Moines, Iowa.

Detroit (M,T) Closes Dec 12. Exhibited Jan 14 to Feb 4. Data: Dr. Paul Ayres, 18723 Monos, Detroit 24, Mich.

Minneapolis (M,C) Closes Jan 15. Exhibited Feb 4-24 at Minneapolis Public Library. Data: Warren Anderson, 123 S. 7th St., Minneapolis, Minn.

Other Overseas Salons

Royal (M,C,T,L,S,SS,Record,Movies) Exhibited in London, Sept 14 to Oct 15; in Newcastle-upon-Tyne, Oct 28 to Nov 25.

Swedish Master Competition (M) Exhibited in October. Data: The Swedish Master Competition, Box 3221, Stockholm 3, Sweden.

Paris (M or C) Exhibited Oct 14 to Nov 2.

Zaragoza (M) Exhibited Oct 5-25. Data: Secretary, Sociedad Fotografica de Zaragoza, Plaza de San, 7 Banjos, Zaragoza, Spain.

New Zealand (M,T) Exhibited Oct 21 to Nov 15 at Art Gallery, Christchurch and subsequently until May 1951 throughout New Zealand. Data: R. J. Blackburn, P. O. Box 880, Christchurch, New Zealand.

Windlesham (M,T or L) Exhibited at Camberley, Surrey, Oct 13-29. Data: Secy., Windlesham Camera Club, Hallgrove, Bagshot, Surrey, England.

Japan (M,C) Exhibited at Tokyo, Osaka, Nagoya and Fukouka beginning Oct 15. Data: Intl. Photographic Salon, The Asahi Shimbun, Yaraukucho, Tokyo, Japan.

Lincoln (M,A,S,T,L) Closes Nov 11. Exhibited Dec 9 Jan 9 at Usher Art Gallery. Data: Lincoln Camera Club, 2 Mint St., Lincoln, England.

Madrid (M) Closes Nov 15. Exhibited in December. Data: Secretary, Real Sociedad Fotografico, Calle del Principe, 16, Madrid, Spain.

Lucknow (M,C,T) Closes Dec 15. Exhibited Feb-Mar 1951. Data: Secy., U. P. Amateur Photographic Assn., 10 Cantonment Rd., Lucknow, India.

psa Color

KARL A. BAUMGARTEL, APSA
353-31st Avenue, San Francisco 21, Calif.

Although not specifically mentioned in the Bill of Rights, one of the great American privileges is the right to "gripe," and as we have a couple on our mind we are going to get rid of them. Both are in connection with color slide exhibitions.

First, we would like to know why current exhibition committees seldom receive the benefit of the experience of previous committees. As an example, and this is not an isolated case, last year we attended the judging of the fourth color slide exhibition of a state fair, and the one thing that was obvious at the judging was that the chairman in charge had to feel his way through the whole proceeding, doing everything by hit and miss. This was inexcusable in view of the fact that the club handling the details had plenty of experience in the exhibition field, and especially inexcusable in that there were several past chairmen present who could have done much to eliminate the confusion.

In this particular instance, it must be said that with all the lack of proper coaching, the chairman did an otherwise admirable job, there being only one detail that could be questioned. It afterwards developed that due to the lack of an explanation to the judges as to what the end results of the judging were to be, one of the judges afterwards told the audience that he had purposely voted against the acceptance of slides that showed the use of photographic skill or knowledge beyond the average and had voted to accept such slides as he felt were made by less experienced photographers who might need encouragement. That, of course, was a very nice thought and much to the judge's credit as an individual, but it did not fit in with the purpose of the exhibition, which was to show the best possible pictures available, regardless of whom they were made by. There are many different kinds of photographic activities, many intended to encourage and teach the less experienced workers. Exhibitions, which are helpful to beginners in that they give them an opportunity to see the best work being done, should always strive to maintain the highest quality possible.

Our other gripe is a small one and refers to the exhibitions that ask that contributors enclose the entry blank and fee in the same package with the slides. If these exhibitions are so anxious that this be done, they should cooperate to the extent that they furnish entry blanks printed on a paper of such weight and size that it can be folded evenly for insertion in the little yellow boxes they ask us to use. In most instances the entry blanks are of a size that no matter how you fold them one end or one edge has to be tucked in under, making for unevenness in pressure on the slides in the package. This is undoubtedly responsible for some of the breakage found in the packages received by exhibitions. Glass can stand tremendous pressures without breaking if the pressure is evenly applied and the glass is evenly supported. The minute there is any unevenness in the pressure or in the support you run into trouble. In many cases exhibitions can avoid this trouble by making a minor change in the dimensions of their entry blanks.

CONVENTION HIGHLIGHT

Sat., Oct. 21st — 9:30 A.M.

Battle of the century — catch as catch can — no holds barred. Four of photography's great will debate on pictures. Fists may not fly but words will — and how! Names *may* be called — cuss words *may* be heard. Adolf Fassbender, Hon. FPSA; John R. Hogan, FPSA; Bruce Downes, journalist, and Jacob Deschin, APSA, will, in as friendly a manner as possible, discuss pictures — "Pictorialism, Modernism, Futurism." An aisle-packer; get in early.

DON'T MISS IT!

Changes

This month we have only one change to report, but it is one that gives us considerable pleasure. Due to the fact that our technical trouble shooting service has become so popular, service being given to members in at least seven countries besides the United States and Canada, it has become necessary to relieve W. K. Raxworthy of the other details he has also been so very ably handling for the Color Division. Therefore, effective at once, the Color Print Set For Individuals and the Color Print Circuits will be handled by a new C.D. National Committee member, H. G. Mitchell of 7455 North Greenview Avenue, Chicago 26, Illinois. Mr. Mitchell has done many fine things for color photography in the Chicago area and we are lucky to be able to secure his services.

Baltimore 1950

Back in the January Color Division column we wrote at some length under this same heading. This is a further report on the same subject:

First, let it be said that our invitation to members to submit ideas for possible program features was accepted by one member only, other than the members of the Color Division National Committee. As this lack of response was rather expected, we cannot say we were surprised. If any who criticised last year's show criticise this year's convention, they are going to be reminded that they were given an opportunity to do something constructive.

This is being written in August, and while program arrangements are not yet complete, they have progressed far enough for us to know that this year's audiences at Baltimore are going to be offered some fine material, far better than at any previous convention. Those particularly interested in color are not only going to see and hear talks of much higher quality but they are also going to receive a considerable increase in quantity.

While the Color Division did play a greater part in this year's programming than in any previous convention and did furnish a number of ideas and speakers, most of the credit belongs to the Conven-

tion Committee at Baltimore. While there must be a number of individuals in Baltimore who deserve credit, our own contacts were chiefly with Harrison S. Sayre, the chairman of Baltimore's color section, and to a lesser degree with M. L. Schaefer, Jr., who handled the camera club programs. We want to go on record that these two individuals deserve all the possible credit that can be given them. Mr. Sayre deserves extra mention not only because his share of the program was far more extensive but also on account of the many fine ideas he had from the start and for the way in which he completed arrangements both on his ideas and ours.

Arrangements for another color feature are being made by Theron "Tim" Holden of the PSA Technical Division. This, if completed as planned by Holden, and I am sure it will be, will hit an all time high in programs for color photographers. Tim Holden has been kind enough to refer to this as a joint Technical Division-Color Division program, but in all honesty it must be said that the greater part of the credit belongs to Mr. Holden and to the Technical Division. The Color Division could never have completed anything like this by itself.

The story on the Color Slide Exhibition at Baltimore presents a different story. Doubtless, you will see an interesting show well handled, but it will not be the kind of show that could have been held if the Color Division had been allowed to present certain ideas we had made ready. Our plans, put into execution, would have increased greatly the number of entries, giving the judges hundreds of additional slides from which to make their selection, it would have increased Baltimore's income from entry fees and it would have given Color Division members entering slides tangible benefit.

Furthermore, contrary to the custom in the past, the Color Division was not shown the usual courtesy of being allowed to suggest or pass on the judges selected. None of this can be blamed on the Color Division, and although the committee at Baltimore was notified as early as December 1949 as to whom they could contact in the Color Division for help in connection with the color slide exhibition, little blame can be placed on them. As we see it, the whole trouble was caused by a well meaning but ill-advised individual, who should have acted as an intermediary, but took it upon himself to make decisions that we feel he had no authority to make and that we know he was entirely unqualified to make. These decisions were made after he had been notified that we had plans to build up the exhibition both in quality and size. We sincerely hope that this will never happen again.—KAB

Coming Exhibitions

First Bexley (Ohio), Oct. 20-29. Deadline Oct. 9. Four slides, $1. Forms: Fred H. Braunlin, 455 Elsmere St., Columbus 6, Ohio.

Mississippi Valley, Nov. 1-13. Deadline Oct. 25. Four slides (up to 3¼x4), $1. Forms: Noel F. Deiporte, 586 Stratford Av., St. Louis 3, Mo.

Chicago, Nov. 10-19. Deadline Oct. 21. Four slides (up to 3¼x4), $1. Forms: Russel Kriete, 4949 Byron St., Chicago 41, Ill.

CONVENTION HIGHLIGHT

Thurs., Oct. 19th — 9:30 A.M.

The Use of Tape Recordings for Camera Club Programs — featuring a tape recorded program prepared by P. H. Oelman, FPSA — "Photography of the Nude." Mr. Oelman in person, will describe how the recording was prepared and will suggest how camera clubs can get the most benefit from such programs. A PSA feature.

DON'T MISS IT!

Cuba, Dec. 15-Jan. 15. Deadline Dec. 5. Four slides (up to 3¼x4). $1. Forms: Sr. Dagoberto Villar Puente, Club Fotografico de Cuba, O'Reilly y Compostela, Habana, Cuba.

Chicago Nature, Feb. 1-28. Deadline Jan. 15. Four slides (any size), $1. Forms: Blanche Kolarik, 2824 S. Central Park Av., Chicago 23, Ill.

Minneapolis, Feb. 13-14. Deadline Jan. 22. Four slides, $1. Forms: Warren Anderson, 123 S. 7th St., Minneapolis, Minn.

psa Camera Club

H. J. Johnson, APSA
2134 Concord Place, Chicago 47, Ill.

Organization of Special Project

Dozens of clubs have attempted the "home town pictures" project. Few of these have ever been completed.

They fail for two reasons. First, the incentive is not sufficiently challenging to the photographer who wants to create rather than merely "record." And even when there is sufficient enthusiasm for a record type of project, failure results when mechanics of the project are poorly organized.

The answer to the first is to make the project challenging, to require that the pictures, though factual, must also be pictorial. This means that they must be able to win prizes in competitions or acceptances in national exhibitions. It means that the postcard type of picture is not enough. It means that the home town must be seen with imagination and artistry.

Picture Main Street? Yes, but maybe when the sun makes golden threads of the street car tracks. Picture the court house? Yes, but maybe when a storm sky is its background while it yet is in the sun's rays. A park picture? Yes, but maybe when the trees are silvery laced with ice. A picture of the highest building? Yes, but maybe at an angle which makes it a composition in lines and shadows. "Pictorial, yet factual" should be the theme.

This is the theme of the Color Division's famous "Chicago Pictorial" set which was prepared to illustrate the possibilities and has been booked solidly for two years.

The organization of the project also has much to do with its success. It is better not to approach it in a general way as something which it is hoped members will support, but to organize it as a definite, responsible unit with dues and meetings of its own till completion of the project.

This unit, which might be called the "Project Group," should include competent workers though all members should be welcome. At least a year should be planned for completion of the project because this period will cover four seasons, enabling a full cycle of study of viewpoints for selected subjects.

Annual dues in the group should consist of 5 prints or slides which are acceptable for the final set. It probably will be necessary to submit a much higher number in order to meet this, but all non-accepted pictures would be returned.

The group would have a chairman, and would meet four times a year, corresponding approximately to the four seasons. At the first meeting, a list of subjects would be prepared, with the suggested angles to make them pictorial. Then members would be assigned (on basis of nearness to the subject, availability of time when lighting is proper, etc.) to obtain the pictures.

At the next meeting each member would bring in all pictures taken and the program would consist of a qualified critic to discuss the pictures, followed by general discussion by the membership, and finally a vote as to which pictures were acceptable for the project.

These meetings would continue until the desired number of pictures had been accumulated, at which time the project would be completed, or the group could be continued to obtain additional pictures with greater specialization of subjects.

Photo-Journalism

Cliff Edom, APSA
18 Walter Williams Hall, Columbia, Mo.

Isadore Arnold Berger, APSA, and his nominating committee selected a fine slate of Dave Eisendrath, APSA, for the Chairmanship; Hod Schumacher, APSA, as vice Chairman, and Jo Scott, Columbus, Ohio, as Secretary-Treasurer. We are sure they are going to do a grand job in adding to the prestige of the P-J Division, and to PSA.

On The Ground Glass

Joseph R. Johnson is about the busiest man in California. A former instructor at the Fred Archer School of Photography in Los Angeles, he now shoots pictures for the Western Division of Trans World Airlines, and is publicity photographer for many Hollywood publicity agents. In the past, Johnson has done portrait photography, illustration (on a free-lance basis), commercial and industrial shooting. Like the good fellow that he is, Johnson volunteers to help the Photo-Journalism Division in any way that he can. I am sure the new officers will be calling on him one of these days, and I am just as sure that Joe Johnson will "deliver."

R. W. Mochl, a newcomer to the P-J Division, tells us he has been more interested in the technical aspects of photography up to the present time, but that he is glad he has joined the P-J Division. "I think I am going to enjoy it," he writes, "especially as soon as I get a little time to take part in the activities." We are pretty sure you are going to enjoy your P-J affiliations, R. W. We hope it won't be too long before you can participate in the portfolio, etc. The old saw still holds: "A fellow gets out of an organization in exact proportions to what he puts into it."

Peter C. Trapolino, Rochester, N. Y., does much shooting for local papers and handles many free-lance assignments for the smaller publications of his community. Pete is "happy he has subscribed to the Press Division of PSA." He thinks the National Press Photographer is a great publication and enjoys it very much. Trapolino would especially like to see more on "how to do it," and more technical articles concerning press photography. That reminds us — we are now looking for good press articles to be included in the January issue of the JOURNAL. If you have some good ideas about what you'd like to see in this issue, or if you have an article for possible consideration — material which would be of interest to you — please send them to me at 18 Walter Williams Hall, University of Missouri, Columbia, Mo.

Betty Williams, Sioux City, Iowa, has been seriously interested in photography for about two years. A member of "the Royal" as well as PSA, she commenced sending to salons only this year. (She had earned two acceptances at mid-summer, and several more by now, we hope.) Betty is secretary of her local camera club and of the newly formed Portfolio Camera Club. Miss Williams "works in a part of town where there is much good material," and says she may have a career in photojournalism. Here's wishing her the best of luck.

W. G. Shepleng, Baltimore, who is interested in action news pictures, writes that he is certainly "enjoying the Photo-Journalism Division and the publication, National Press Photographer." Mr. Shepleng uses a 4 x 5 Speed Graphic camera, and an Auto-Rolleiflex. He reports "moderate success" with his pictures and regrets that he has only a limited amount of time for free-lance work. Mr. Shepleng, who hopes to do more of this type of work in the future very thoughtfully says "the program of the P-J Division sure helps."

Two recent books — of interest to members of this Division are: "The Complete Book of Press Photography" edited by Joseph Costa, APSA, and published by the National Press Photographers Ass'n, Inc., (at $5, the copy), and "News Pictures of the Year" a compilation from the Seventh Annual competition sponsored by the School of Journalism, University of Missouri, and the Encyclopaedia Britannica (50 cents per copy). Both books may be purchased from PSA JOURNAL.

Nature Division

BY LOUISE BROMAN JANSON
6252 S. Kedzie Ave., Chicago 29, Ill.

Who's Who in Nature Photography

OF THE VARIOUS NATURE photography exhibitions held during the past season, six met the requirements for listing and support by the Nature Division. This is a decrease of two from the previous season, representing shows which were not continued.

In accordance with the Nature Division standards a number of nature shows which restricted subject material, permitted wholesale entries, etc., are not included in this list. Those which are included are Louisville, PSA, Columbus, Chicago, Rochester, and Buffalo.

Because listing now requires acceptances in two shows instead of one, as previously, the list is shorter than before. On the other hand, however, its significance is greater. The individuals listed are not necessarily "nature photographers" but they have shown an ability to make excellent photographs of nature subjects. They number 211. In addition, there were 334 who had acceptances in one show.

An asterisk appearing before a name indicates that the person served as a judge. The code for the abbreviations is *E*—Exhibitions, *S*—Slides accepted, and *P*—Prints accepted.

Name and Location	*E*	*S*	*P*
Adams, Blanche H., Phoenix, Ariz.	5	15	14
Agnew, Louise F., Chicago, Ill.	5	6	–
Alexander, Cy, Brooklyn, N. Y.	2	2	–
Anderson, Arthur E., Chesterton, Ind.	2	2	6
Armstrong, A. Millard, Columbus, Ohio	3	4	–
Armstrong, Ralph W., Neptune, N. J.	2	–	5
Ayres, E. D., Los Angeles, Calif.	3	5	–
Ballentine, G., Upper Montclair, N. J.	3	–	11
Barker, I. C., San Francisco, Calif.	3	5	–
Barrett, O. H., Salt Lake City, Utah	2	3	–
Bemm, Frank W., Skokie, Ill.	2	3	–
Berkemeyer, Joseph D., Chicago, Ill.	2	4	–
Bevis, L., Durnan, South Africa	2	4	–
Bielenberg, Rev. H., Oil City, Pa.	3	8	–
Bittman, Florence R., Jamaica, N. Y.	2	3	–
Blaha, George W., Chicago, Ill.	2	6	–
Bleech, Miles R., Jackson, Mich.	3	–	3
Bolinger, Duis D., Corvallis, Oregon	2	4	–
Bothe, Hans, Riverside, Calif.	2	3	–
Bourne, Edward H., Rochester, N. Y.	5	8	9
Bovey, Martin, Jr., Concord, Mass.	4	–	11
Bowman, John D., Buffalo, N. Y.	2	–	5
Brennan, John B., Salt Lake City, Utah	2	5	–
Brown, Albert N., Chicago, Ill.	4	9	–
Bruhl, Chester P., San Bernardino, Calif.	4	9	–
Burellbach, Maj. M., Chattanooga, Tenn.	2	–	4
Burgess, Dr. J. F., Montreal, Canada	2	5	–
Burgess, Warren B., Washington, D. C.	2	–	4
Burtch, Herbert P., Chicago, Ill.	6	17	–
Buxton, Eugenia, Memphis, Tenn.	4	3	4
Calkins, Harold S., Wayland, Mich.	2	3	–
Chandler, L. G., Red Cliffs, Australia	2	–	4
Chow, Sam K., Seattle, Wash.	2	–	5
Chrastil, Alois, Bronx, N. Y.	2	2	–
Cignatta, Charles J., Baltimore, Md.	4	–	14
Cole, Bruce, Tucson, Ariz.	4	11	–
Cornett, Carl C., Louisville, Ky.	2	–	4
Craig, J. L., Miami, Fla.	3	5	–
Crossett, Edward C., Chicago, Ill.	2	–	2
Cunliffe, Selina, Methuen, Mass.	4	9	–
* Cutak, Ladislaus, St. Louis, Mo.	2	3	–
Darby, Russell E., Westfield, N. J.	3	3	–
Darling, John S., Chicago, Ill.	3	4	–
Derwich, C. F., Hamtramck, Mich.	2	3	–
Diesing, E. H., St. Louis, Mo.	3	6	–
Dingus, Ruth L., Honolulu, Hawaii	3	5	–
Duvall, Albert H., Galesburg, Ill.	4	4	–
Ensenberger, H. J., Bloomington, Ill.	4	–	14
Fairbanks, C. W., Rochester, N. Y.	2	–	5
Farr, Willard H., Chicago, Ill.	5	8	2
Faucht, Dr. F. A., Philadelphia, Pa.	3	1	4
Firth, Caryl R., Trappe, Md.	2	–	5
Firth, Tom, Trappe, Md.	3	–	5
Foote, Howard E., New York, N. Y.	3	5	7
Fraser, Frank A., Chicago, Ill.	2	–	3
Fuguet, William D., New York, N. Y.	2	3	–
Fuller, Frank E., Bloomington, Ill.	5	–	11
Getzendaner, C. W., Forest Grove, Ore.	3	6	–
* Gibson, H. L., Rochester, N. Y.	4	7	15
Gill, J. B., Salt Lake City, Utah	3	8	–
Gray, Lillian, Chicago, Ill.	3	4	–
Greenhood, H. W., Hollywood, Calif.	2	4	–
Grefe, Henry J., Saginaw, Mich.	3	4	–
Grefe, Robert E., Saginaw, Mich.	2	5	–
Guard, A. T., West Lafayette, Ind.	2	4	–
Guardia, A. J. De La, San Jose, C. R.	3	5	–
Haak, A., Norwood, Man., Canada	2	4	–
Hamlin, Gladys E., Washington, D. C.	2	2	–
Hammons, William, Worthington, Ohio	2	4	–
Harvey, Rev. L. C., Byron, Ont., Canada	2	4	–
Heacock, Esther, Wyncote, Pa.	2	–	4
Heffner, Irene M., Albany, N. Y.	2	1	6
Herche, Edward F., New York, N. Y.	3	6	–
Herold, C. L., Houston, Texas	4	–	8
Hibbard, F. G., Wawatosa, Wis.	2	4	–
Hiett, Lawrence D., Toledo, Ohio	6	16	–
* Hill, Edward A., Fleetwood, Pa.	5	17	–
Hill, J. L., Jr., Rochester, N. Y.	3	5	–
Hobbs, Edward J., Cleveland, Ohio	2	2	–
Holloway, J. A. B., Los Angeles, Calif.	2	3	–
Holst, Agnes M., Phoenix, Ariz.	3	5	4
Horner, R. B., Chicago, Illinois	5	9	–
Howard, Edwin J., Oxford, Ohio	6	13	12
Howe, Charles A., Homewood, Ill.	4	5	–
Hungerford, Homer, Dallas, Texas	3	6	–
Hunt, I. DeP., Philadelphia, Pa.	2	2	5
Hyman, Alfred H., Rochester, N. Y.	2	–	7
Irvine, Eleanor, Berkeley, Calif.	2	2	–
Jahn, Burton W., Milwaukee, Wis.	2	3	–
* Janson, Louise Broman, Chicago, Ill.	5	12	13
Jennings, George J., St. Louis, Mo.	4	6	–
Jensen, Katherine, Pittsford, N. Y.	2	3	–
Johnson, G. F., State College, Pa.	4	8	–
Johnson, G., Lewis, Winthrop, Maine	3	3	–
Johnson, H. J., Chicago, Illinois	5	11	–
Kidwell, O. A., Pasadena, Calif.	2	2	–
Kinch, Harold E., Endicott, N. Y.	2	3	–
Kirkland, James Lee, Chicago, Ill.	5	9	–
Kolarik, Blanche, Chicago, Ill.	5	9	1
Kremm, A. M., Columbus, Ohio	2	2	–
Krueger, Elton W., Monterrey, Mexico	3	4	–
Kyle, Marguerite, Columbus, Ohio	4	6	–
Kyllingstad, H. C., Santa Fe, N. M.	2	5	1
Leach, Walter J., Chicago, Ill.	2	–	3
Lindahl, Ry E., Drayton Plains, Mich.	4	–	7
Long, William A., Pullman, Wash.	2	3	–
Lynch, Kenneth C., Tulsa, Oklahoma	3	7	–
Madsen, J. F., Berkeley, Calif.	3	5	–
Mansfield, Carl, Bloomingdale, Ohio	2	–	4
Manzer, Helen C., New York, N. Y.	5	10	–
Matteson, Clifford, Buffalo, N. Y.	3	10	12
Maurice, Elmira C., Richmond, Virginia	4	7	–
Maurice, H. A., Jr., Richmond, Virginia	3	4	–
* Mayer, Henry M., Cleveland, Ohio	2	3	–
McKinley, Dr. G. M., Pittsburg, Pa.	5	–	15
Medberry, Mrs. H. L., Armington, Ill.	4	10	–
Merryfield, N., Fort Arthur, Ont., Can.	5	9	–
Miess, Ray, Milwaukee, Wis.	2	2	–
Miller, Lowell, Rochester, N. Y.	3	2	5
Miller, Paul L., Seattle 5, Wash.	6	9	–
Mitchell, H. G., Chicago, Ill.	5	8	–
Moyer, Foster E., Reading, Pa.	2	5	–
Muensch, Emil, Santa Barbara, Calif.	3	9	–
Muirhead, Helen L., Boston, Mass.	2	2	–

CONVENTION HIGHLIGHT

Sat., Oct. 21st — 7:30 P.M.

Big event of the year. Presentation of awards. Social feature of PSA's entire membership. The Annual Banquet — presenting for palpitating PSA palates, Maryland cuisine as it should be "cuised." Plus a surprise stunt feature to be pulled by the P-JD. A "must" for all hands.

DON'T MISS IT!

Name and Location	*P.*	*S.*	*F.*
Neidorf, Charles, New York, N. Y.	2		8
Nelson, June M., Glencoe, Ill.	5	9	
Nelson, Robert R., Denver, Colo.	2	3	
Nichols, Tad, Tucson, Ariz.	2	8	
Norgaard, E. D., Los Angeles, Calif.	2	4	
Norgaard, F. L., Los Angeles, Calif.	2	5	
Norona, Charles J., Los Angeles, Calif.	3	7	
Ochsner, Dr. B. J., Durango, Colorado	2	4	
Owens, M. E., Toronto, Ont., Canada	4	12	
Paphe, Arthur, Western Springs, Ill.	3	11	
Parker, G. W., Bloomington, Ill.	3	4	
Parker, R. A., Los Angeles, Calif.	2		4
Piper, S. C., Sydney, Australia	2		1
Pluemer, W. A., Plainfield, N. J.	3	7	
Pomeroy, Dr. R. B., Scarsdale, N. Y.	3	6	
Prentke, E. M., Cleveland, Ohio	2	7	1
Presgrave, R., Toronto, Ont., Canada	3	4	
Proctor, Frank, Phoenix, Ariz.	3	13	
Purdy, G. W., Port Orchard, Wash.	3	9	
* Quitt, Louis, Buffalo, N. Y.	4	14	11
Ratcliffe, W. W., Orem, Utah	2	5	
Rehe, Albert M., Niagara Falls, N. Y.	2	3	
Reich, Harry R., N. Tonawanda, N. Y.	5	19	17
Reid, Gordon B., Santa Barbara, Calif.	2	2	
Rice, Dr. Frank E., Chicago, Ill.	3	7	
Rice, Richard D., Rochester, N. Y.	5	13	10
Rigden, D. L., Oakland, Calif.	2	3	
Robertson, J. E., Milwaukee, Wisc.	4	8	
Rogers, H. A., Hollywood, Florida	2		4
Ross, Brig. Gen. M., Chicago, Ill.	2	8	
Ross, Mable, Salt Lake City, Utah	2	3	
Rothschild, Norman, Brooklyn, N. Y.	2	2	
Ruch, Dr. F. J., Plainfield, N. J.	2	5	
Sage, Ruth F., Buffalo, N. Y.	5	14	17
Saggus, F. W., Elberton, Georgia	2	2	
St. Clair, W. P., Honolulu, Hawaii	4	11	
Savary, W. H., N. Plainfield, N. J.	6	13	
Schuelke, T. H., Liverpool, N. Y.	2		4
Schwartz, Pearl E., Chicago, Ill.	3	8	
Seldidge, Hy, Honolulu, Hawaii	6	8	
Skull, Mildred, Chambersburg, Pa.	2	3	
Sickels, H. A., San Francisco, Calif.	3	6	
Simmons, George C., Pullman, Wash.	2	4	
Skupe, A. T., Bayside, N. Y.	3	8	
Small, L., Port Arthur, Ont., Canada	2	3	
Smith, C. F., Dartmouth, Nova Scotia	6	15	
Smith, Dr. S. W., Salt Lake City, Utah	4	7	
Smith, W. W., Salt Lake City, Utah	3	6	
Soper, R. W., Port Arthur, Ont., Canada	3	6	
Sorensen, Erik, Chicago, Ill.	4	8	
Stanley, John H., Columbus, Ohio	3	6	
Stark, Alice P., Toronto, Canada	2	4	
Steck, George F., Oil City, Pa.	3	7	
Stewart, A., Santa Barbara, Calif.	6	16	
Stewart, W. G., Napa, Calif.	4	8	
Sullivan, W. F., San Francisco, Calif.	5	7	
Suter, Al, Chicago, Ill.	5	10	
Suter, Helen, Chicago, Ill.	3	4	
Swink, C. E., Elmhurst, Ill.	2	8	
Syverud, W. L., Rochester, N. Y.	2	2	
Thornhill, H. A., Merced, Calif.	2	4	
Tilden, M. W., Chicago, Ill.			8
Townsend, Bertha S., Johnstown, Pa.	5	15	
Trapp, L. A., Toronto, Ont., Canada	4	6	
Turner, Dr. C. C., Memphis, Tenn.	5		16
Tuttle, Dr. C. S., Philadelphia, Pa.	2		2
Underwood, H. J., Buffalo, N. Y.	3	7	
Violett, Cmdr. Q., Norfolk, Va.	2		4
Vonn, S. J., Toronto, Ont., Canada	2	1	
Walgreen, Mrs. C. R., Chicago, Ill.	4	7	
Wallen, Arnold, Oakland, Calif.	2		6
Ward, V. E., Angels Camp, Calif.	6	9	1
Warne, Robert L., Brooklyn, N. Y.	2		4
Watson, Alfred, Buffalo, N. Y.	4		11
Webb, Rand, Beaver Falls, Pa.	2	5	
Weber, N. E., Bowmansville, Pa.	2	3	
Weber, R. I., Cheektowaga, N. Y.	2	3	
Weihrich, H. C., Buffalo, N. Y.	2	3	
Welty, Ruth, Chicago, Ill.	5	5	
Whipple, Roy A., Winnetka, Ill.	3	9	2
* White, Dr. G. B., Port Colborne, Can.	3		7
Whiteside, Therese, Julian, Calif.	5	10	
Williams, David H., Owego, N. Y.	2		3
Wohlrabe, Raymond A., Seattle, Wash.	2		3
Wolf, Paul J., Hawthorne, N. Y.	5	15	
Wolfe, Roy, Portland, Ore.	2		4

Any questions concerning the list should be referred to the Chairman.

As incentive for exhibitions to maintain high standards of management efficiency, we are beginning this season a method of special recognition for those shows:

1. Which meet all recognition requirements.
2. Whose contributors receive their report cards within 14 days after the deadline, or 8 days after judging.
3. Whose contributors receive their catalogs within 17 days after the end of the show.
4. Which have a gap no greater than 6 weeks between the deadline and the end of the show.
5. Which promptly answer all correspondence from contributors.

The special recognition will be in the form of silver medals provided by the Nature Division to be awarded to contributors as special prizes.

Who's Who Awards

The winner of the medal for the most accepted prints in the 1950 Who's Who listing was H. Lou Gibson, APSA, Rochester, New York, who exhibited 15 prints in 4 shows and served as a judge for one exhibition, giving him an average score of 18¾ points. The award for the largest number of accepted slides went to Edward A. Hill, APSA, Fleetwood, Pa., who exhibited 17 slides in 5 exhibitions and served as a judge for one show. His average score was 20 2/5 points. The highest combined total of prints and slides was achieved by Harry R. Reich, N. Tonawanda, N. Y., who scored 19 slides and 17 prints in 5 exhibitions giving him a total of 36 points. These awards will be continued next year.

Autumn Colors

One of the compensations for the passing of summer and the approach of winter is the pageant of colors displayed by the forests in autumn. This may be of short duration, but is gorgeous while it lasts.

Strange to say, the brilliant coloring of the leaves and their falling are closely allied phenomena. Long before cold weather comes the tree has been making preparation for losing its leaves. In the case of most of our deciduous trees, the twigs stop growing in length and no more leaves appear after the middle or end of August. They expend their energy for the rest of the growing season in the building of their winter buds. These buds may be considered as the "resting stage" of the tree. Within this tiny structure is packed in embryo form next year's leaves, and sometimes flowers too, usually wrapped in layers of protective scales.

The next step in the preparation for winter is to drain all the valuable food material in the form of leaf pulp out of the leaves so that none will be lost. When this process has been completed, a layer of corky cells forms at the base of the leaf stalk and gradually seals off the leaf from its parent twig. By the time the stem has been thus weakened enough for the leaf to fall, either by its own weight or when seized by a gust of wind, the scar where it has been attached is so perfectly sealed that no sap is lost.

As previously indicated, the preparation for the falling of the leaf is accompanied by a no less phenomenal change in color. The marvelous chemical known as "chlorophyll," which give the leaf its characteristic green color, is an unstable substance, which must be constantly renewed. Consequently, when the pipe lines to the leaf have been sealed off, the chlorophyll breaks down and disappears. This paves the way for other pigments, which have been present in the leaf but overpowered by chlorophyll, to determine the tint of the leaf. "Carotin," the pigment that lends its color to carrots, butter and egg yolks, is responsible for the yellows and oranges of Sugar Maple and Birch. Iron and other pigments provide the Oaks, Red Maple, Sassafras and Gum with their brilliant reds. Tannin is responsible for some of the browns.

A few trees, such as the Walnuts, drop their leaves before they "ripen" sufficiently to display their share of fall colors. Each species of tree has its own individual chemical formula of sap, and these individualities are reflected in their autumnal hues. One can readily identify trees by their characteristic colors in the fall.

Contrary to the statements of poets and writer of children's stories, the action of frost has nothing to do with the production of the gay colors of autumnal foliage. In fact, the brightest colors appear when the fall season is long, dry and sunny, since such weather is conducive to the ripening of the leaves. Continued cold rains wash the color out of the landscape, and cloudy weather dulls its hues. An occasional freeze often cuts the leaf off before it is ripe, causing it to be shed prematurely.

The leaf is the chemical laboratory of the tree, devoted to the manufacture of its essential food. The active agent in this process is the chlorophyll mentioned above. By means of the amazing process called "photosynthesis" the raw materials consisting of mineral salts and water from the soil, plus carbon dioxide from the air, are transformed into complex organic compounds such as carbohydrates, fats, proteins, and cellulose. During this process, the carbon dioxide is broken down, the carbon utilized in forming organic compounds, and the oxygen liberated into the air in the form of a gas. Thus the respiration of the leaves, being just the reverse of that of animals, maintains the balance of oxygen in the atmosphere.

Since the power required to operate this chemical plant is derived from sunlight, chlorophyll is active only during the daylight hours. The design of the leaf is such as to expose the maximum amount of surface to the sun. Furthermore, the system of branching and the arrangement of

the leaves on the twig all cooperate to present as near as possible a solid mosaic, and in so doing intercept the maximum amount of solar energy.

The falling leaf still contains some valuable mineral matter, such as nitrogen and phosphorus. During the process of decomposition, these elements are returned to the soil and thus made available again for use by vegetation in the form of mellow black leaf mould.

The best time for color shots of autumn woods cannot be predicted accurately on account of weather and other conditions. The color photographer must keep one eye on the weather and the other on the woods to determine just when the hues are at their best. A very good scheme is to select a woodland scene early in the fall which will provide good composition and which contains species of trees which will give pleasing color combinations. Then watch this spot from week to week, and try to catch it at the height of its glory. You can also decide beforehand what time of day will be best for proper lighting effects. This plan will save you the time which would otherwise be lost in roaming around the countryside at the last minute, searching frantically for suitable color subjects.

And now just a word of warning. If you intend to submit some of your prize slides of beautiful autumn scenes to nature exhibitions, do not include any people or buildings in them, since this almost invariably results in rejection by the judges.—WILLARD H. FARR.

Coming Nature Exhibitions

10th Kentucky Nov. 19 to Dec. 3. Deadline November 6. Four slides $1.00. Four prints $1.00. Entry forms are available from Kent Previette, 2220 Highland Ave., Louisville 4, Ky.

6th Chicago Closes Jan. 15. Exhibited Feb. 1st to 28th. Entry forms from Blanche Kolarik, 2824 S. Central Park Ave., Chicago 23, Ill.

TERRITORIAL COLUMNS

PSA in New England

By NEWELL GREEN, APSA
64 Girard Ave., Hartford 5, Conn.

What is it about a man with a beard that is so irresistible to the camera boys? Nothing else gets them quite the same way. Even when they're busy as can be posing and taking a couple of pretty models at a camera club outing, just let a big bushy beard appear on the scene (A real one. No false whisker stuff.) and eyes begin to glisten, heads cock to one side and fingers hover around shutter releases with an earnestness of purpose you never see on any other occasion. Even the cheesecake gets abandoned for the time being.

At least that's the way it was at the Annual Outing of the New England Council of Camera Clubs. The program of events included a couple of sessions with two models in outdoor settings, and handsome and photogenic girls they were too. The assembled multitude was crowding about and clicking away merrily till somebody turned up with a local resident who had a beard long enough to make you shout "Beaver!" a quarter of a mile away. After that, the fellows who really wanted the pictures were elbowing each other around those luxuriant whiskers.

Even without the unscheduled appearance of the beard, the event would have been a thorough success. For the fifth successive year, carloads of cameras, tripods and gadget bags (in custody of their owners whose heads were barely visible above the piles of equipment) came from all over central New England and converged on the campus of the University of Massachusetts, at Amherst, Mass. If it hadn't been a good big campus, tripod legs would have been tripping all over each other. Friends and families came along with the camera owners so there were well over a couple of hundred people at the gathering. They represented 31 camera clubs, about half the club membership of the Council. They came from all over Massachusetts, from up in New Hampshire and Vermont and from Connecticut as far away as Stamford, with the Armchair PS of that city represented by fifty per cent of its membership, three out of six! As usual, the outing was under the expert direction of John Vondell, FPSA, and Don Lacroix, President and Secretary of the Council respectively, and they provided a program everyone enjoyed, including a beautiful day with sunshine, blue sky and properly composed clouds.

The crowd ranged all over the campus finding things to photograph, both with and without models, and since the University includes an agricultural department, there was a fine chance for farm animals, sheep, piglets, a huge stallion and a mare with a frisking colt. And the girls posed handily with all of them. So did the beard!

Headquarters for the outing were at the Memorial Building on the campus and there the walls of the lounge were lined with 75 prints of the Annual Outing Competition, to which everyone attending was invited to submit two prints. Many of them were good enough to make it look like a real salon and the two judges, S. Alton Ralph, APSA, of Springfield, Mass., and your correspondent, had to do some close figuring to pick out the top prints for the prizes. For first, they selected a fine figure study by Fowler Wilbur, of Springfield, Mass., and second went to the picture of the cross-eyed piccolo player with a fly on his nose, done by Douglas Wanser, also of Springfield. Third was a beautifully handled snow scene by Alfred A. Wales, of Providence. Honorable mentions went to Harold Hammond and Maurice Frank, both of Providence, Warren Dow, of Swampscott, and Herbert Worth, of Boston.

FRIGEON Grace Ballentine

From 5th Chicago Nature Exhibition

At noon they let the cameras cool off for a while and everybody piled into the University Dining Hall where they had a choice of a turkey or roast beef dinner with all the trimmings. But good, too! (Sounds like a fairy story but the price was only 95¢!) After dinner, there was a gathering under the campus maples for a business meeting, announcements and short talks. The Council Trophy was presented to the Armchair PS, of Stamford, Conn., for attaining the highest total in the Inter-Club Print Competition of the past season. Judge Ralph commented on the seven prints picked as winners in the Outing Competition and did so with his usual wit and ingenuity, even to explaining how the lack of screens produced the fly on the nose of the piccolo player.

Most significant business at the assembly was the election of officers. For seven years John Vondell as President and Don Lacroix as Secretary have held the top offices in the NECCC. They have done an inestimable service, taking over the leadership of the Council during the war years when it was completely dormant, and building it into an active group with a membership of more than 60 clubs. They have accomplished it with an enthusiasm for photography, a generous contribution of time and effort and a friendliness which has brought widespread cooperation. None could have done it better. Now they ask to be relieved, and consequently, Lee A. Ellis, of Waban, Mass., and Mrs. Jacquelin Sykes, of Belmont, Mass., were elected President and Secretary. Mr. Ellis is retiring President of the Boston CC and Mrs. Sykes has been Editor of its monthly publication, "The Reflector."

CONVENTION HIGHLIGHT

Photo Contest — All PSA Members "Photo of a Member by a Member." Popular, "de-egotizing," family album snapshot contest with prize money dripping off every lens hood. Open only to PSA members. Entry prints must be received by Baltimore PSA Convention Committee, 2 East North Avenue by October 14th. Get into the fun!

DON'T MISS IT!

LETTERS TO THE EDITOR

(Concluded from page 530)

guess would be about 50 times. Since every exhibitor keeps his own records on every print in his salon collection, it would be an easy matter to tell when a print had reached its maximum.

It is immediately apparent that this change would eventually rule out some of the best in salon photography. This would not seem too desirable. It does not, however, rule out the exhibitors who could continue to exhibit new photographs as long as they did not reach the maximum. For cities who want a fresh, revitalized show, for those who want to answer the criticism "we are tired of seeing the same old pictures over and over" this plan would be a boon. But more important it spares the judges from passing judgment on prints which have hung so many times before that their past records cannot be ignored.

The invitation salon has many possibilities. I will touch upon a few. Perhaps it would seem from the above discussion that when a print was too good that it was penalized in that it could no longer be hung. Far from it. This print would now be eligible for an invitation salon. For a print to be in the select invitation group it must have reached the maximum in the open group. *When it is sent to an invitation salon it is hung without judging of any kind.* A good artist when invited to exhibit his paintings shows what he pleases. His paintings are not required to stand the acid test of a jury, whether competent or not, time and time again.

Further, to answer the criticism that salonists don't dare to depart from the accepted pictorial techniques for fear of losing out, I would add this provision. Using the present accepted rule that four prints may be submitted, the invitation exhibitor would be allowed to submit one new print, of the four that he is entering, which would not have to pass judgment before any jury to be hung in the invitation salon. Here is the opportunity for our best photographers to show their talents not subject to the whims of any jury. (It is, of course, conceivable that this same print could be entered in the open competition for consideration by a jury if the exhibitor so desired).

SPRING SONG — Louis Quitt

From 5th Chicago Nature Exhibition.

SUBWAY STAIRS — T. S. Hall

It can readily be seen that this invitation group would be a super exclusive one representing only the best in salon photography. A list of exhibitors who would be available for invitation salons would be set up by PSA. To become eligible a prospective exhibitor would send in the names of his 3 or 4 prints, which have passed the open maximum and a list of the salons where these pictures had hung. This would become a certified list published in PSA JOURNAL and other photo magazines.

This effectively places responsibility for the high standards of these salons in the hands of PSA where it should be. Of course, a few top notch exhibitors are not members of PSA. Perhaps they would soon find it wise to join. If not, they could make their own arrangements with salons not following PSA practices. Whether to grant them invitation privileges in salons following PSA rules would be a touchy subject to decide.

A salon would have the option of inviting any exhibitors it so chose. It would probably try for a balanced exhibition.

These invitation salons would probably appeal to those small cities which would like to have a first rate salon each year but do not have the organization to handle the large amount of clerical work involved in handling a huge number of pictures. A large organization could readily sponsor both the open and invitation salons concurrently.

Needless to say, it would seem inappropriate to charge an entry fee for those in this invitation group.

I have lightly skimmed the surface of a new, different and vastly interesting system of salon procedure. If nothing else it is an attempt at constructive rather than destructive criticism.

BETTY CARPENTER

DON'T MISS

The Color Clinic at Baltimore, Oct. 20th, with a panel of experts composed of Howard Colton, Harold Harsh, Lloyd Varden, and Harry Shigeta under Moderator Carlton.

NEWS AND NOTES

Word has been received of the untimely death of Edward Alenius, FPSA, Basking Ridge, N. J., in an automobile accident. Another recent death was that of Harry F. Lambert, Webster Groves, Mo., from a heart attack a few days prior to his 71st birthday.

PSA Headquarters has received notice of the passing of the following members:

Hanna, Forman, Globe, Arizona
Kothe, H. H., New York, N. Y.
Coburn, J. S., Detroit, Mich.
Thomas, Dr. Victor E., Pasadena, Calif.

Corrections

A regrettable error appeared on page 475 of the September PSA JOURNAL, column 3, in the formula for Shipman's Divided Developer. Solution # 3 (Fine Grain) called for 800 ozs. of Borax, when the correct amount should have been 800 *grains*.

Our attention has been called to the fact that a credit line on the photograph, "Enticement," by A. Stewart, which appeared on page 489 of the Color Division Supplement, was omitted. The color slide of this picture was a winner of the Grand Leica Triple Competition in 1949 and was reproduced in the Fall 1949 issue of *Leica Photography*. The credit line should have read: *Leica Photography*, published by E. Leitz, Inc.

Miscellaneous

The Boston CC is conducting two courses this fall, one on "Movie Making for the Amateur" by Cecil B. Atwater, FPSA. The other, dealing with still photography, will be under the supervision of Richard C. Cartwright. Data may be obtained from E. P. Harding, 15A St. Mary's Court, Brookline, Mass.

The American Magazine (640 Fifth Ave., New York 19, N. Y.) is offering $50 for any snapshot of family situations that can be used as an idea for a cover painting. Send your photo to the Cover Editor.

The series of camera club exhibits of members of the New York Metropolitan CC Council, featured in the Empire State Building's 86th floor Observatory Lounge this summer, has been extended to the end of the year due to the tremendous response on the part of the public. Over 250,000 visitors have viewed the prints.

DESERT FLOWER — Caryl R. Firth

From 5th Chicago Nature Exhibition.

MADONNA M. Ampudia

Print of the Month Contest

The fifth judging of the Print of the Month Contest was held at PSA Headquarters and the judges announced the following results:

Beginners Group, Pictorial Class
1st—Manuel Ampudia, Mexico City
"Madonna"
2nd—George Munz, Bergenfield, N. J.
"Closed Till Ten A.M."

Beginners Group, Nature Class
1st—George Munz, Bergenfield, N. J.
"American Prince"
2nd—Dr. S. W. Smith, Salt Lake, Utah
"Peony"

Advanced Group, Pictorial Class
1st—T. S. Hall, Los Angeles, Calif.
"Subway Stairs"
2nd—Wellington Lee, Bronx, New York
"Farming in China"

Advanced Group, Nature Class
1st—Henry Kyllingstad, Santa Fe, N. M.
2nd—Clifford B. Paul, Moline, Ill.
"Tampas Grass"

Advanced Group, Action Class
1st—Wellington Lee, Bronx, N. Y.
"Frog Jump"
2nd—J. E. Armstrong, Detroit, Mich.
"Star of the Big Top"

The Print Contest is judged in a different city each month, although all entries are to be sent to PSA Headquarters as in the past. The schedule of judging and the individual in charge follows:

Month	*City*	*Judges and Judging Arrangements*
Sept.	St. Louis	W. E. Chase
Oct.	Chicago	Mrs. Anne P. Dewey
Nov.	Rochester	Dr. Alfred H. Hyman
Dec.	New York	John H. Magee
Jan. 1951	Boston	L. Whitney Standish
Feb.	Cincinnati	P. H. Oelman
Mar.	Baltimore	Ernest C. North
April	Pittsburgh	O. E. Romig
May	Detroit	Dr. C. J. Marinus
June	Cleveland	Doris Martha Weber
July	Atlanta	C. A. Luce
August	Philadelphia	Charles Heller

Bristle-thighed Curlew and Young (on first nest known to science) by H. C. Kyllingstad

Print of the Month Contest

THE RULES

1. There is no entry fee.

2. All active PSA members (individuals) in good standing are eligible, including foreign members.

3. Each member may submit one print per month in each class (total of 3 prints —see rule 13.)

4. One competition will be held each month.

5. Closing date for receipt of pictures at PSA Headquarters is the last day of each month. Pictures arriving late will be placed automatically in the competition for the following month.

6. All prints submitted become PSA property. They will *not* be returned.

7. Reproduction rights are granted to PSA when pictures are submitted.

8. For each winning print, a "PSA Print of the Month Medal" will be awarded. Winning prints and pertinent contest data will be printed in PSA JOURNAL as funds and space permit.

9. Winners for the preceding year will be judged annually at the PSA Convention to pick the "Print of the Year" in each class.

FROG JUMP Wellington Lee

AMERICAN PRINCE Geo. Munz

10. Pictures by any photographic process are eligible.

11. Print size shall not exceed "8 x 10."

12. Film exposure must have been made by the entrant. Prints may be made by the entrant or by a photofinisher.

13. The following are the classes of entry:

Classes	*Beginner Group **	*Advanced Group ***
Action	1 medal	1 medal
General Pictorial (scenic, portrait, genre, etc.)	1 medal	1 medal
General Nature (animals, plants, flowers, pets, etc.)	1 medal	1 medal

* Anyone who has not (prior to day of entry) had a picture accepted in an International Salon or Exhibition of Photography is classified as a "Beginner."

** Anyone who has had a picture accepted in an International Salon or Exhibition is eligible only in the Advanced Group. Any beginner winning 3 "PSA Print of the Month" awards automatically transfers to Advanced status.

The January competition will be for Christmas and New Year cards only, according to the following classes.

	Beginner	*Advanced*
Appropriate scenes	1 medal	1 medal
Humor	1 medal	1 medal
Table tops and other synthetic scenes	1 medal	1 medal

14. PSA assumes no responsibility for notifying competitors of arrival of prints. Members wishing such notification should include a stamped self-addressed postal card to be filled in by Headquarters staff. A suggested message is: "Prints for competition arrived on ....."

15. Include the following data on the back of each print entered. Prints without this information cannot be judged.
Maker's name
Maker's address
Group (Beginner or Advanced)
Class (Action, Pictorial, or Nature)
Further data will be requested for winning prints.

16. Send prints to:

PSA Print of the Month Contest
2005 Walnut Street
Philadelphia 3, Pennsylvania

Annual Report of the Treasurer

The books of the Society were audited by W. R. Donachy, by order of the Board and supervised by the Finance Committee.

Due to expanded activities and the readjustment of dues, the deficit for the year amounted to $5,884.55.

During the fiscal year the Society acquired a headquarters building in Philadelphia at a cost of $27,000, to house the working staff and future activities of the PSA.

CHARLES HELLER, APSA, *Treasurer*

BALANCE SHEET

as of June 30, 1950

		6/30/50	6/30/49
Cash in Bank and on Hand			
Corn Exchange Nat'l. Bank		$17,984.28	$13,500.35
Petty Cash		50.00	50.00
		18,034.28	13,550.35
Investments — U. S. Government Bonds		—	6,456.50
Accounts Receivable		847.05	2,232.34
Real Estate			
Land	$15,000.00		
Building	12,000.00		
	27,000.00		
Less — Reserve for Deprn.	266.68	26,733.32	—
Furniture and Fixtures	7,118.84		
Less — Reserve for Deprn.	2,293.00	4,825.84	5,533.89
Prepaid Accounts			
Insurance	244.40		
Postage	239.57		
Jewelry Expense	1,065.59		
Property Taxes	959.93		
PSA Progress Medal Award	324.07		
Miscellaneous Accounts Receivable	218.10		
Journal Expense (Envelopes)	535.58	3,587.24	1,612.68
TOTAL ASSETS		$54,027.73	$29,385.76
LIABILITIES			
Accounts Payable		$ 89.30	$ 2,655.52
Advance Payment Dues		3,140.29	1,373.63
Advance Payment Advertising		133.28	133.40
Reserve Life Membership Fee		3,847.00	4,947.00
Building and Endowment Fund & Misc.		—	3,989.78
Continental Print Contest		174.25	241.46
Foreign Salon Circuit		167.30	167.30
Stuyvesant Peabody Award		197.26	206.75
Mortgage		5,563.28	—
Reserve for Cornerstone Membership		25,635.09	—
Permanent Print Committee		118.38	—
Self Supporting Division Funds			
Color	$ 1,420.27		
Motion Picture	342.53		
Motion Picture Drawing a/c	419.79		
Nature	452.45		
Photo-Journalism	1,112.35		
Pictorial	2,092.05		
Technical	1,147.73	$ 6,987.17	$ 6,382.81
Surplus 7/1/49	13,859.68		
This Years Loss	5,884.55	7,975.13	9,288.11
TOTAL LIABILITIES		$54,027.73	$29,385.76

PROFIT AND LOSS STATEMENT For Year Ended June 30, 1950

	Itemized		*Total*	
	Income	*Expense*	*Gain*	*Loss*
GENERAL FUNDS:				
Dues — Active and Industrial	$45,059.23			
Contributing Membership	23.00			
Interest Earned	459.16		$45,541.39	
HEADQUARTERS:				
Sale of Jewelry	890.98			
Sale of Labels	36.59			
Sale of Decals	393.14			
Miscellaneous Income	174.23			
Salaries		$15,368.71		
Rent		1,125.00		
Postage		419.85		
Postage Meter Rental		150.80		
Deprn. Furniture and Fixtures		700.61		
Repairs Furniture and Fixtures		20.05		
Light		230.73		
Fuel		363.50		
Telephone and Telegraph		200.94		
Office Supplies		564.61		
Janitor Service		431.50		
Express		16.48		
Printing		957.80		
Traveling		157.59		
Miscellaneous		1,662.87		
Purchase of Jewelry		535.70		
Cuts and Plates (PSA Seal)		25.50		
Insurance		169.36		
Maintenance and Supplies		263.32		
Bank Service Charges		31.24		
Reimbursement from { Journal / Camera Club Comm. / Membership Comm. }		(3,700.00)		
Incidentals		12.60		
Water Cooler Rental		72.00		
Deprn. Real Estate		266.68		
Interest on Mortgage		717.73		
Property Settlement		356.50		
	1,494.94	21,121.67		$19,626.73
THE JOURNAL:				
Advertising Income	$29,907.03			
Subscription Income	727.97			
Sale of Reprints	544.27			
Sale of Journals	1,313.51			
Miscellaneous	74.25			
Salaries		$ 4,469.45		
Postage		2,429.41		
Deprn. Furniture and Fixtures		7.44		
Light		66.92		
Telephone and Telegraph		145.90		
Office Supplies		173.47		
Express		289.64		
Printing		36,960.41		
Cash Discounts		551.62		
Traveling		701.08		
Miscellaneous		539.67		
Reprints		351.72		
Editorial Service		350.00		
Cuts and Plates		1,635.85		
Mimeographing		49.80		
Commissions — Agents		3,333.69		
Commissions — Employees		1,750.77		
Cover		727.42		
Maintenance and Supplies		32.82		
Reimbursement to Headquarters		400.00		
Copyrights		94.00		
Incidentals		94.25		
Storage Charges		41.25		
	32,567.03	55,196.58		$22,629.55

	Itemized		*Total*	
	Income	*Expense*	*Gain*	*Loss*
CAMERA CLUB COMMITTEE:				
Print Service Fees	$ 9.70			
Sale of Manuals	13.00			
Postage		$ 155.22		
Print Service (Postage)		16.90		
Office Supplies		24.30		
Express		137.19		
Miscellaneous		164.20		
Insurance		37.89		
Maintenance and Supplies		7.00		
Reimbursement to Headquarters		1,500.00		
Incidentals (Directory and Stenography)		2.00		
	22.70	2,044.70		$ 2,022.00
MEMBERSHIP COMMITTEE:				
Salaries		250.00		
Postage		823.61		
Office Supplies		30.50		
Printing		937.40		
Miscellaneous		26.50		
Reimbursement to Headquarters		1,800.00		3,868.01
HONORS COMMITTEE:				
Postage		60.75		
Telephone and Telegraph		11.69		
Office Supplies		13.27		
Express		25.93		
Printing		216.65		
Miscellaneous		256.98		
Incidentals		5.00		590.27
PUBLIC RELATIONS & JOURNAL SUPERVISORY COMM.:				
Postage		39.98		
Miscellaneous		115.54		155.52
LIBRARY AND HISTORICAL COMMITTEE:				
Postage		$ .90		
Storage Charges		100.91		101.81
PERMANENT PRINT COLLECTION COMM.:				
Postage		.28		
Incidentals (Stenography)		11.38		
Office Furniture		48.32		59.98
NATIONAL LECTURE PROGRAM:				
Expense		25.00		
Postage		4.67		
Miscellaneous		12.38		42.05
PRESIDENT'S OFFICE:				
Postage		42.64		
Telephone and Telegraph		17.33		
Expense Account		500.43		560.40
CONVENTION COMMITTEE:				
Telephone and Telegraph		7.88		7.88
EXHIBITION COMMITTEE (1950):				
Postage		128.29		
Telephone and Telegraph		1.59		
Express		2.68		132.56
CORNERSTONE:				
Postage		27.60		
Expense Account		1,577.60		1,605.20
PICTORIAL DIVISION:				
Insurance		23.98		23.98
			45,541.39	51,425.94
NET LOSS FOR YEAR			5,884.55	
			$51,425.94	$51,425.94

Annual Reports of PSA Divisions

Color

The eighth year of the Color Division's existence has been marked by an extensive expansion of its services to members and by a great increase in the number of participants in its activities. Highlights include a considerable use of tape recordings in connection with traveling slide shows, and the elimination of all extra charges such as reservation or participation fees for Color Division members and all entry fees for members except in the National Club Slide Competitions, where such fees are still necessary to help pay for the hundreds of dollars worth of trophies awarded winning clubs and individual club members.

COLOR PRINT ACTIVITIES: During the year our Color Print Sets were brought up to date by the inclusion of prints made by a newly available process. Our Color Print Service, which includes trouble shooting on both prints and transparencies, has proven so popular that it was found necessary to relieve the personnel handling this activity of all other duties to allow them to put in full time on this one service, such service having been given to members not only in the United States and Canada but also in Argentina, Australia, Cuba, England, India, Japan and South Africa. No changes were necessary in our Color Print Circuits which have enjoyed a steady growth. The greatest increase in interest and in the number of participants in any print activity has been in our Color Print Competitions. As these competitions are open to non-members upon payment of an entry fee, considerable publicity was given them in the national photographic magazines, thus attracting not only new entrants but also being responsible for new members joining the Society.

COLOR SLIDE ACTIVITIES: Our Slide Competitions For Individuals, being open to non-members on the same basis as are our print competitions, experienced the same growth and have created the same interest in PSA membership among non-members participating. The National Club Slide Competitions have grown so rapidly in the number of participants that it has become necessary to split up the judging into separate units for two classes of clubs and to inaugurate a simplified scoring system. With an increase in the number of participants there has been an increase in the number of prizes awarded.

The demand for our Exhibition Slide Sets has been so great that we have tripled them in number. Now that some of these sets give a choice of either typed or tape-recorded commentaries, it has become evident that a still further increase in the number of sets is necessary. Our International Slide Set Exchange features sets from a half dozen different countries for clubs in the United States besides making our own sets available in other countries. One set rates special mention, this being a set of slides made in Japan by American military personnel, which comes complete with tape-recorded commentary.

Our Slide Circuits For Individuals have been changed to avoid any holding of slides while new circuits are being completed. The newer Slide Study Groups have grown so fast that it has become difficult to find a sufficient number of capable individuals to act as commentators. There has been a satisfactory increase in the number of clubs participating in the Slide Circuits For Clubs. Some changes and additions have been made to our Slide Instruction Sets to give them a wider coverage of subject matter and it has been a source of considerable satisfaction to us that the Pictorial Chicago Project has been responsible for similar sets being produced and circulated by clubs in many cities and towns.

RELATED ACTIVITIES: Who's Who In Color Slide Photography, which has long been regarded as the most authoritative listing of color slide exhibitors, is now the only such listing published. For the year ending June 30, 1950, this list included the names and scores of 670 individuals who had acceptances in 2 or more of the 29 exhibitions that met our requirements for listing, this being an increase of 32% in the number of shows recognized.

No changes have been found necessary in our Standards For Color Slide Exhibitions, which have been responsible for the elimination of a number of abuses in the exhibition field. Our Aid For National Exhibitions has done much to ease the problems of exhibition committees and has increased the number of exhibitions being held.

Other related activities such as the Color Division *Bulletin*, our Judging Service, and our Testing Service have done much to increase the value of Color Division membership. During the past year the Hospital Slide Project collected and distributed over 17,000 slides to Army, Navy and Veterans Hospitals either through a circuit operated by the American National Red Cross or direct to the hospitals. New books purchased or received as donations have so increased the Color Division Library in size and popularity that its operation has now become a full time activity.

Thanks are due the members of the Color Division National Committee and to the volunteer helpers whose unselfish efforts have made the above possible. They are Frank Bayless, George Blaha, Mildred Blaha, Merle Ewell, Charles Green, R. B. Horner, George F. Johnson, H. J. Johnson, APSA, Charles Kinsley, Al Klein, Blanche Kolarik, APSA, C. Brad McKee, APSA, John Modderjonge, APSA, Dennis Pett, Frank Proctor, W. K. Raxworthy, Erik Sorensen and Paul J. Wolf.

KARL A. BAUMGAERTEL, APSA, *Chairman*

FINANCIAL STATEMENT—COLOR DIVISION
July 1, 1949 to June 30, 1950, inclusive

Balance June 30, 1949	*Income*	*Expense*	*Balance June 30 1950*
$1,378.71	$1,453.28	$1,411.72	$1,420.27

Detail of Expenses:

Print Sets, Circuits and Competitions	$ 45.23
Exhibition Slide Sets	303.29
Foreign Slide Sets	15.25
Slide Competition for Individuals	67.69
Slide Study Groups	63.04
Slide Circuits	27.51
Testing and Trouble Shooting Services	49.10
C. D. Bulletin	474.50
C. D. Activities Sheets	41.57
Exhibition Aids (Mailing List etc.)	32.25
Special Exhibition Medals	42.84
Clerk Maxwell Trophy Plaques 1950-55 inc.	60.97
Pictorial Chicago Project	1.00
Library	8.00
Journal Copies	3.75
Color Supplement PSA JOURNAL	11.08
Membership Slides	4.42
Mimeographing, Typing, etc.	19.24
Stationery and Supplies	17.33
Postage and Misc. Petty Expenses	232.21
Total Expenses	$1,411.72

Motion Pictures

The Motion Picture Division has deeply felt the loss of Harris B. Tuttle, APSA, as Chairman, who, at the advice of his physician, gave up active participation in not only the affairs of PSA but many other organizations in which he was actively engaged.

The limited budget of the MP Division still makes it impossible to provide a program of useful and practical services for movie makers. However, it is felt that at least a modified program of beneficial services will be offered in the near future commensurate with the funds available.

During the past year a regular bi-monthly bulletin service was instituted, and Martin B. Manovill, of St. Louis, Mo., has served excellently as editor. The Bulletin is attractively prepared and is provided with a striking masthead carrying the insignia of the Division.

A "Lead" and "The End" title was designed by Albert Roser, of Minneapolis, Minn. These titles are now completed and will be offered shortly to members of the Division in both 8mm and 16mm for a nominal charge. Each title is reproduced in color and carries the insignia of the Division with a statement identifying the person as a member of the Motion Picture Division of PSA. These titles will not only afford prestige for the member but needed publicity for the Division and PSA.

A plan providing a loan library of useful motion picture books for Division members is being prepared by Alfred S. Norbury, and it is hoped that Division funds will allow this to be put into active use shortly.

The "Motion Picture Portfolio" or "Film Exchange" program was abandoned for lack of membership participation.

The Division has the following standing committees:

Membership; News Bulletin; Convention; Papers; Cinema Club Activities; Book Review; Visual Educational Films; Religious Films; Titles and Decalcomanias; Musical Backgrounds; Honors Recommendations; and Nominating.

The Division also has representative chairmen for the following districts and countries:

Eastern States; Central States; Central-Western States; Western States; Mexico; Canada and Cuba.

The Division furnishes each new member at no cost a decalcomania in full color of the MPD insignia and provides additional copies for members at a slight charge.

The Division also conducts a Motion Picture Exhibition in connection with each Annual PSA Convention. Each film accepted for the Exhibition is provided with an attractive lead acceptance title in color, and the person submitting the accepted film is furnished an "Award of Merit" certificate.

The Baltimore MPD Convention Committee is headed by Martin B. Manovill and the MPD program is completed. The entire committee including the local Baltimore MPD Chairman, John F. Eckels, is to be complimented for their cooperation and the splendid job they are doing.

A small library of "loan" films for cinema clubs is retained by the Chairman of the Cinema Clubs Activities Committee, Martin B. Manovill of St. Louis, and these are available at no cost to cinema clubs who agree to pay both the forwarding and return shipping costs.

The increased cost of PSA membership has seriously affected the MPD membership, and the Membership Chairman, Alfred S. Norbury, has worked hard to retain, revive and secure new members. A survey made by the Membership Chairman definitely shows that membership interest in the MPD is lagging seriously by reason of insufficient articles in PSA JOURNAL. Practically all of the delinquent dues members stated that they were giving up their memberships "because the JOURNAL does not contain articles directly applicable to MP photographers," or, "that the dues were too great."

The matter of JOURNAL articles has been taken up with the Editor of the JOURNAL and he has promised to publish one to two MPD articles per month if the MPD Editor for the JOURNAL, Robert Unseld, can secure them. Accordingly, this situation should be corrected in the very near future.

In April 1950 a 24-page Motion Picture Supplement to the JOURNAL was published, and a similar supplement is presently planned for October 1951.

B. J. Babbitt, of Riverside, Illinois, assisted Mr. Manovill with the MPD program for the First Regional PSA Convention held in Chicago in April 1950, and both are to be complimented for the fine MPD program.

CONVENTION HIGHLIGHT

Thurs., Oct. 19th — 7:30 P.M.

Mr. Ralph Gray, APSA, will entertain the entire PSA membership with those Mexican and Guatemalan natural color movies which have earned him such national acclaim. An inspiration for every photographer — movie, still or color.

DON'T MISS IT!

At the St. Louis PSA Convention, the MPD Executive Committee voted to withhold the forming of "MPD Sections" until a program of member services is put into effect. The forming of "MPD Sections" will require an amendment to the MPD Constitution and By-Laws. The required amendment has been prepared, but it is not to be submitted to the members for adoption until the matter of sections is again taken up.

Some progress has been made in the past year, and much of the constructive work done on "member services" is expected to materialize into a good MPD program very shortly.

FRANK H. RICHTERKESSING, *Chairman*

Nature

During the past year the Nature Division has worked to expand its activities in order to create greater interest in the photography of nature subjects.

Six nature photography exhibitions met the requirements for listing in the 1950 Who's Who. This is a decrease of two from the previous year representing shows which were discontinued. Although the number of recognized salons has decreased, the number of contributors to nature exhibitions shows a marked gain. In the current Who's Who, listing requires acceptances in two shows instead of one as was formerly needed. This makes the list shorter but more significant. The Division offers silver medal awards to individuals contributing to nature exhibitions. One is given to the person who has the most accepted prints, another to the one who has the most accepted slides, and a third to the person who has the highest combined score.

During the ensuing year the Nature Division will begin to show special recognition to those exhibitions which maintain the high standards of management efficiency outlined in the 1950 Who's Who listing. Silver medals will be provided by the Division to the exhibitions receiving special recognition which are to be awarded as specific prizes to their contributors.

The Nature Division maintains a master mailing list which is available to shows that meet the recognition requirements in exchange for a complete contributors list.

The print competitions which are held in January and June have shown an increase in contestants under the direction of Harry R. Reich. Medals and ribbons are offered as prizes and the three best prints from each contest are reproduced in PSA JOURNAL. Criticism service is also available.

The color slide contests occur in March and September and are patterned after the print competitions offering the same prizes and services. Each contest attracts more contributors showing that competition and criticism are desired by Division members who work in color.

The permanent collection of outstanding nature prints and slides is steadily growing and sets from this group will be available to clubs and individuals during the coming year.

"Nature Notes," the bulletin of the Division, helps to keep its members informed of current activities.

The retiring chairman wishes to thank the officers, national committee, and all others who have helped to build the Nature Division to its present status. A bright future for the Division is foreseen under the guidance of its new officers.

LOUISE BRAGMAN JANSON, APSA, *Chairman*

NATURE DIVISION FINANCIAL REPORT

Balance June 30, 1949		$ 568.70
Income (Approximate)		500.00
Expense		
Slide contest	$ 90.55	
Print contest	73.35	
Who's Who awards	12.99	
Referendum	9.85	
1949 Convention	13.80	
Bulletin	14.45	
Miscellaneous	1.26	
		216.25
Balance June 30, 1950		$ 452.45

Photo-Journalism

The writer assumed the Chairmanship of this Division on an interim basis following the resignation of Chairman Cliff Edom. In consequence, I have obtained from Cliff a brief summary of the activities of the Association during his chairmanship which comprised the greater part of the fiscal year. This report may be set forth in substance as follows:

Constructive action was taken within the Photo-Journalism Division during the St. Louis Convention. Specifically, your Chairman with his Committee made arrangements with the Chairman of the Board of the National Press Photographers Association, Joseph Costa, APSA, whereby all Photo-Journalism members would thereafter receive copies of the monthly magazine published by the National Press Photographers Association. This publication, given as a premium to Division members, has been well received and has done much to create interest and understanding in Photo-Journalism activities.

A further action taken at St. Louis was that of appointing an Advisory Committee to the Photo-Journalism Division. This Committee consisted of Messrs. Joseph Costa, David Eisendrath, Robin Garland (Program Chairman), together with others serving on an ex officio basis. A Nominating Committee, chairmanned by Isadore Arnold Berger, also was named.

It is believed that the last year has been the most successful in the history of the Photo-Journalism Division's activities. Much has been done to promote Photo Journalism and its place within the PSA and it is anticipated that further constructive work will be undertaken as the new year commences under the guidance of the incoming Chairman of the Division. Membership in the Division is the largest that it has ever been, while reserves in terms of finances are in improved status.

During the year closing, the News Letter (edited currently by Sag Kash of the Cynthiana, Ky., Democrat) was reactivated; the Photo-Journalism Division started its portfolio (under Christhilf with Russ Arnold as commentator); the Division column has regularly appeared in the PSA JOURNAL; and the feeling within the Division improved in a manner which assures that the Division will go forward with the continued growing support of its membership.

As of year end, the number of members of the Photo-Journalism Division totalled 184; the dollars in its setup as its reserve fund amounting to $1,112.35.

H. A. SCHUMACKER, APSA, *Chairman*

Pictorial

During the last fiscal year efforts were directed toward increasing the efficiency of existing services and activities, lowering operational costs and establishing new services and activities.

A comprehensive accounting system has been established which has made possible the abolition of all fees for participation in activities and the substitution of a "service charge" based on costs involved. This has resulted in substantial savings to the members.

The status of the various activities and services is summarized as follows:

American Portfolios—Eldridge R. Christhilf, Director. Two major changes have been effected: (1) the divorcing of the Portrait Portfolios from American Portfolios, and (2) the expansion of the American Portfolios to include Hawaii. Urban M. Allen of Honolulu is General Secretary for Hawaii. The following Portfolios are operating:

Pictorial	67 circles
Star Exhibitor	4 "
Control Process	1 "
Nature	1 "
Photo-Journalism	1 "
Miniature	2 "
Special	1 "
Total	77 circles

Steps have been taken to reduce operating costs by changing a number of circles to an 8 x 10" maximum print size. This effects savings in two ways: (1) Reduction in weight, and (2) it permits planographed light weight print folders in place of the previously printed type with a saving of 5 cents per folder. Of the portfolios remaining with the 11 x 14" maximum size, a 5-cent per folder saving was effected by reducing size and by using a planographed folder. As 77 circles will require more than 2700 folders in a year, this saving is sizeable.

All new PSA members are being contacted immediately after enrollment with an invitation to participate in the activity. Another project for next year is the Professional Group Portfolios to be set up under Paul L. Gittings.

International Portfolios — Jane Shafer, Director. On June 30, there were 15 International Portfolios with a total of 37 circles. A complete file of participants is being compiled. There is interest in the formation of Portrait Circles and it is hoped that they can be formed soon. Suggestions for a quarterly bulletin are being considered.

Portrait Section — Paul J. Wolfe, Director. Membership is now 199. A new portfolio, No. 14, was inaugurated for hand colored portraits. The portrait criticism service is growing in popularity. "Portrait Pointers" published quarterly by Maurice H. Louis is presented without charge to all members of Portrait Portfolios. A new column "PSA Portrait Portfolios" will soon be printed in THE FOLIO. News items for this column come from the portfolio notebooks and comment sheets.

Portfolio Camera Clubs — Stew T. Anderson, Director. Six Portfolio Camera Clubs are operating: Owatonna, Rochester and Austin in Minnesota; Great Falls, Montana; Lincoln, Nebraska; and Sioux City, Iowa.

Portfolios of Portfolios — Dennis R. Anderson, Director. Four sets of composites of International Portfolios are now available for circulation among camera clubs. Schedules are being made up for future showings. Complete information may be had from the Director.

American Exhibits — Fred Fix, Jr., Director. An invitation salon of some 90 prints was assembled in July 1949 from 3-star and 4-star Exhibitors. This was reduced to about 75 outstanding prints and turned over to the Photographers' Association of America for their national convention in Chicago, where it occupied a prominent place and was well received. Until July 1950 it circulated to local professional groups. In return the PAA turned over its 1949 Masters Print Show (about 120 prints) most of which were displayed at the St. Louis Convention. One hundred one of the "Masters" prints were shown as American Exhibits until July 1950, when they were returned to PAA. Negotiations were completed for another print exchange during 1950. Invitations to contribute to PSA's 1950 show were mailed to all 2-, 3-, and 4-Star Exhibitors whose names appeared in the 1950 *American Annual*. Six other print shows were circulated as American Exhibits. These included 50 prints by John R. Hogan; 50 by Louis S. Davidson; 23 by Edward Alenius; 50 from Syracuse Camera Club; 50 from Omaha Camera Club and 35 from Fort Dearborn Camera Club. These shows were viewed by 20 individual clubs and two councils. Experience during the past year indicated that clubs and councils do not have exhibition space for 50-print shows. Next year the standard show will consist of 35 prints, with a corresponding reduction in the service charge from $3 to $2. New shows will be by Carl Mansfield (human interest pictures), Edward C. Crossett (varied subjects), and at least one "Star Exhibitor" show. Due to the unusual demand for the Hogan show, it is being held over.

International Exhibits — Dr. Glenn Adams, Director. A brief resume of the exchanges is as follows:

Australia — Three exchanges are in operation.
India — Three exhibits have been received.
Cuba — One show exchanged.
China — Shows have been received from Hongkong and from Francis Wu.
Italy — The Italian Show will soon be available for general circulation.
The Netherlands — A new show has been received.
England — The famous Royal Show has been sent back to England. A new show should be here soon.
South Africa — A show is on the way to U. S.
Sweden — One show is on the way to America.

The American Invitational Show, assembled for circulation in England, has been sent to Sweden. Additional shows are being assembled in Mexico, Brazil, France, Costa Rica, Japan (3), and Germany. American shows are needed for foreign exchange, preferably one-man shows and salon-type exhibits from camera clubs. Interested clubs should write to the Director.

Camera Club Print Circuits — Wm. R. Hutchinson, Director. Two circuits are in operation and a third soon will be. Seventeen clubs are participating in two circuits with a third circuit soon to be added.

Camera Club Judging Service — W. Dovel LeSage, Director. This activity is especially designed for clubs without adequate judging facilities. To operate this activity economically, qualified

pictorialists were selected at several strategic points in the country.

Personalized Print Analysis Service — J. Elwood Armstrong, Director. This new activity began with announcement in the April and May 1950 issues of THE FOLIO. It is too new for accurate appraisal. If enough interest is evidenced and if corrected prints are resubmitted, a small display will be arranged for the annual meeting in Baltimore to show the results of the program. Dr. Victor A. Lookanoff has helped with the analysis work. As the program grows, suitable awards will be made as recognition of improvements attained.

Salon Practices — Ralph L. Mahon, Director. In July 1949 a monthly "Coming Salons" list was started in THE FOLIO. Now we list only those salons agreeing to abide by PSA recommendations. When the Exhibition Committee turned over salon practices, a five-page questionnaire covering controversial matters of procedure was mailed to 33 salon chairmen and 45 exhibitors. The generous response indicated strong interest by chairmen and exhibitors in salons. Summarization of answers on finances and fees, dates and time intervals, judging procedures, catalogs and exhibitions were published in THE FOLIO. Work on revision of PD recommendations started last July. It is planned to forward copies of the suggested revision to several salon chairmen and exhibitors for testing, after which they will be submitted for division approval and printed.

Award of Merit — Warren W. Lewis, Director. Star Exhibitor Certificates issued as of June 1, 1950 total 74 as follows: 25 1-Star, 25 2-Star, 18 3-Star, and 6 4-Star. Enameled tabs to wear with the PSA lapel button to designate star exhibitor rank were approved by Directors in April and will be available for distribution soon.

Recorded Programs — Dr. C. F. Cochran, Director. Three programs were recorded, each a little less than an hour in length. These lectures are now in limited circulation as a field test. Response has been very favorable. In process of preparation are talks by leaders in several fields.

Convention Program — Doris Martha Weber, Chairman. An outstanding program has been arranged for the Baltimore Convention. It will be well balanced, instructive and entertaining. Following past practice, there will be a room for the display of Portfolio Exhibits and a PD Headquarters room for special exhibits and for dissemination of general information on activities and services.

The Folio — Miss Stella Jenks, Editor. Last fiscal year closed with a new Editor of THE FOLIO, Miss Stella Jenks.

PD Journal Supplements — W. Dovel LeSage, Editor. Doris M. Weber has been appointed Assistant Pictorial Editor. The first Pictorial Supplement will appear in October.

W. E. CHASE, APSA, *Chairman*

Technical

Sections: It would seem that the Division's efforts to encourage and organize new Sections is once again meeting with success. At least one new Section is virtually sure to be chartered before the end of the calendar year and several conferences with interested groups in various cities attest to renewed interest in this important phase of the Division's activities. The introduction of the new Technical Supplements to the JOURNAL, discussed later in this report, has been most helpful in achieving this renewed interest.

The Sections are becoming increasingly effective in disseminating information of a technical nature as demonstrated by the following figures:

Year	Number of Section Meetings	Number of Speakers	Total Attendance
1945–1946	16	32	2,256
1946–1947	29	39	3,211
1947–1948	50	64	4,640
1948–1949 *	40	59	3,591
1949–1950	47	68	5,669

* Only five Sections reporting.

Attendance at these Section meetings includes many who are not members of the Sections and are, therefore, likely prospects for membership in the Section, the Society and the Division. A large part of the growth of Sections and the Division comes from this source.

Membership: The overall membership of the Society has dropped approximately 20% during the past year as was expected following the necessary dues increase. It was hoped that the number of PSA members affiliated with Sections would not be similarly affected because of the greater advantages of PSA membership which were made available to them during this period. In fact, it was even hoped that the number of PSA members affiliated with Sections would increase for the same reason. The first hope was realized but the second was not since there has been only a 2% loss in PSA members in the Sections.

Membership in the Division increased 7% during this period but the gain was not up to expectations. Much remains to be done at Section, Division, and national levels to adequately exploit the advantages of membership.

Publications: The Technical Supplement to the JOURNAL, "Photographic Science & Technique," three issues of which have been published, has been an outstanding success. To Paul Arnold, new Technical Editor for the Division, Lou Gibson, his predecessor, and Fred Quellmalz, goes the credit for this fine accomplishment.

The advent of these long-sought supplements has been responsible for a marked increase in the number and quality of papers offered for publication. For example, Section's reports disclose a total of 16 papers submitted — several times the best record of preceding years. This is important, not only because of its effect on the quality and prestige of PSA JOURNAL but also because of its favorable long-term effect on the Sections and their membership.

Standards: The past year has been a marked change in the organization within the American Standards Association framework for handling standards relating to photography. The Standards Council of ASA has authorized the creation of a Correlating Committee, consisting of members of all interested groups including PSA, to which it has delegated responsibility for administering photographic standards. This Committee is organized under the chairmanship of Mr. Paul Arnold, APSA, and will meet shortly to consider proposals for the reorganization of the Sectional Committee under its jurisdiction. The PSA and the Division continue to pay an increasingly important part in this activity.

Program: The work of the Division in this field continues to increase in importance. The programs sponsored by the Division at the St. Louis Convention were so well attended that they had to be moved to one of the larger meeting rooms. This was due principally to the excellence of the papers but an important additional factor was the special Division program which was printed and widely distributed. At this convention, the Program Committee also tried, with marked success, a meeting jointly sponsored with the Color Division. Needless to say, the papers presented at this time have been an important additional source of material both for PSA JOURNAL and its Supplements.

Special Awards: Action regarding the previously reported proposal of the former Chicago Chapter to sponsor a special Division award has been delayed because of the indefinite status of that Chapter. In the meantime, the Executive Committee of the Division has authorized and is sponsoring an annual JOURNAL Award to consist of a suitably embellished certificate which shall be presented to the author or authors of the most outstanding technical paper published originally in the PSA JOURNAL, its Sections and Supplements during the preceding calendar year. Additional details of this annual award, including a more detailed description of the types of papers to be considered, are being announced in PSA JOURNAL. Present plans are to present the first award at the Baltimore Convention.

Other Division Committees: As in preceding years, space limitations preclude specific references to the valuable contributions of the many other

FINANCIAL REPORT — LEWIS T. REED, SECRETARY-TREASURER, PICTORIAL DIV.

	Budget	*Receipts*	*Expend.*	*Balance*
Chairman	$ 250.00		$ 235.59	$ 14.41
Permanent Print Collection	50.00		—	50.00
1949 PSA Convention	100.00		68.39	31.61
Art	50.00		81.50	— 31.50
Miscellaneous	250.00		202.63	47.37
Vice Chairman	50.00		17.16	32.84
American Portfolios	50.00	$1109.80	2015.71	— 855.82
International Portfolios	50.00		18.00	32.00
Portfolio Camera Clubs	50.00		41.24	8.76
Portfolio Services	50.00		35.57	14.43
Secretary-Treasurer	50.00		49.46	.54
Award of Merit	50.00		97.12	— 47.12
Portrait Section	100.00	73.50	168.33	5.17
Small Print Program	100.00		—	100.00
Pen Pals	50.00		—	50.00
Assistant-Publications	50.00		8.66	41.34
The Folio	100.00		148.58	— 48.58
1950 Year Book	50.00		14.28	35.72
The Folio Bulletin	150.00		—	150.00
Assistant-Camera Clubs	50.00		11.82	38.18
International Exhibits	50.00		—	50.00
American Exhibits	50.00		2.50	47.50
A-A Club Interchange	50.00		—	50.00
C. C. Print Circuits	50.00		14.28	35.72
Continental Print Contest	50.00		—	50.00
C. C. Judging Service	50.00		9.38	40.62
Instruction Print Sets	50.00		—	50.00
Assistant-Services	50.00		—	50.00
Membership	150.00		20.00	130.00
Organization	50.00		47.94	2.06
P-D Honors Committee	50.00		29.54	20.46
Salon Practices	50.00		29.47	20.53
1950 Convention Program	—		53.66	— 53.66
	$2600.00	$1183.30	$3420.81	$1599.76
	1183.30		362.58	1036.68
	$3783.30		$3783.30	$ 562.58
			NET BALANCE	$ 562.58

NOTE: These figures do not include income from Division affiliation.

CONVENTION HIGHLIGHT

Fri., Oct. 20th — Evening

A feature program of the Convention! Philippe Halsman of "LIFE" Magazine will talk before the entire membership on "Magazine Cover Photography" — and will show huge "blow-ups" of the many covers of this immense magazine which have featured his camera work. A "standing room only" program!

DON'T MISS IT!

committees of the Division which continue to function so effectively.

Finances: The Division's operating expenses have been increased to make possible the several projects described but they continue to be well within income as shown by the following figures:

Balance (6/30/49)	$ 888.68
Income	687.64
Expense	428.59
Balance (6/30/50)	1147.73

Thus the balance of the Division is, in the opinion of the Executive Committee, adequate to meet all reasonable contingencies in the near future.

Conclusion: This is perhaps the only means available to me to express adequately my profound appreciation to everyone for their remarkable accomplishments on behalf of the Division during the five years that it has been my privilege to be its Chairman. One of the principal responsibilities of a Chairman is to see that a group of people are available who, he hopes, will clearly see what needs to be done and then go ahead and do it. In this respect I feel that my term as Chairman has been an outstanding success and I heartily commend to the incoming Chairman the group comprising the Executive Committee who have done so much so well.

F. E. Carlson, APSA, *Chairman*

Annual Reports of Committees

Conventions

At the time of this report, plans for the 1950 Annual PSA Convention in Baltimore are nearing completion and one of the most interesting of all PSA Conventions is promised those making the trip to Baltimore October 18th through 21st. Charles E. Emery, general chairman and his entire staff have been working since the close of the 1949 Convention to produce a bang-up affair. Headquarters are to be in the Lord Baltimore hotel.

The Midwest Regional Convention, held in Chicago, April 14-16, has been completely reported in PSA JOURNAL and to the Board. Chairman Otho B. Turbyfill and his committee produced a standout regional. Attendance was 478, more than 150 being from outside the immediate Chicago area. The banquet was a sell-out. Exhibitions were held by the Pictorial, Technical and Photo-Journalism Divisions and the Color Division presented its slide showing at the banquet. The Board held a regular meeting during the Convention and a field trip was conducted the Sunday closing the Convention. Receipts for the affair were $2,142.00, disbursements were $1,839.22, leaving a surplus of $302.78.

An invitation from the Photo Guild of Detroit to hold the 1951 Annual Convention of the Society in Detroit, October 10th through 13th, was presented to the Board and was accepted. The Detroit Conventions Bureau and other civic organizations joined in the invitation and work has already begun on the plans. The first meeting of the group was held June 16th to put the local committee in action. Lyall F. Cross was selected to head the committee. Headquarters are to be in the Book Cadillac Hotel.

The Southern California Council of Camera Clubs has extended the Society an invitation to hold a Regional Convention in Santa Barbara in June 1951. The Rochester Technical Section has expressed a desire to hold a Regional Convention in Rochester in Mid-March, 1951.

M. A. Woodbury, *Chairman*

Exhibitions

The account of the 1949 exhibition at St. Louis has been closed. The slight deficit of the exhibition was balanced by a transfer from the profit of the Convention. This was the first year that the print entry fee was increased to $2.00. A comparison of entries obtained at St. Louis with the numbers in previous years showed that there was no loss of entries due to the advance in entry fee. This advance was necessary and made possible the balancing of the exhibition budget.

1950 PSA Exhibition. The policy prescribed by the Board for financing and conducting the PSA exhibitions has been followed in planning the 1950 Exhibition at Baltimore to be held October 18 through November 1, 1950. Because of the prohibition against catalog advertising at Baltimore, the print entry fee will remain $2.00. As a special service a preliminary announcement of the 1950 PSA Exhibition in Baltimore was mailed to all foreign members in March. Transparencies of the Permanent Print Collection of the Society will be exhibited at Baltimore. With the full cooperation of the Divisions the local committee is planning an excellent exhibition.

C. C. Ruchhoft, *Chairman*

Finance

The Finance Committee reports that it has advised and assisted,

1 — In the purchase of the headquarters building, 2005 Walnut Street, Philadelphia, Pa.
2 — In the establishment of the Cornerstone Membership Drive to finance said building.
3 — In the preparation of the 1950-1951 budget.

John H. Magee, *Chairman*

Headquarters

With the realization that the Society had outgrown its headquarters facilities at 1815 Spruce Street, Philadelphia, the Board of Directors approved the purchase of the property at 2005 Walnut Street after an extensive study of the problem by the Home Site Committee, under the direction of Chairman Philip Cass, Hon. PSA. Our facilities were moved in November 1949.

During the spring of 1950, the Headquarters Committee entered upon a program of remodeling and renovating. For the present, attention is being directed toward the development of the first floor for the use of the Office Manager and his immediate staff and the second floor where the Library will be located, as well as the clerical operations of the society. Only one room on the third floor will be given attention under the present program. This will be made available to other Divisions of the Society as required.

The Headquarters Committee has been fortunate in having available the services of PSAer John V. Kohlhaas, a Registered Engineer in the State of Pennsylvania. Mr. Kohlhaas has completely surveyed the building and has developed a set of blueprints to be used as a basis for future planning.

While the committee does not anticipate doing all of the necessary or proposed improvements at the present time, it has been working on a basic plan to be worked out for future requirements.

Barring unusual conditions due to unsettled world affairs, the committee expects to complete the remodeling of the heating plant and have it in operation for the coming winter season. Plans are presently being developed for alterations in the plumbing, whereby adequate restroom facilities will be available for the Headquarters staff as well as the general membership who may have occasion to visit Headquarters. When the job is complete the Society will be adequately housed for the first time in its history.

Arnold V. Stubenrauch, APSA, *Chairman*

Member Relations

The main task before the Member Relations Committee during the past year was the inauguration of the Cornerstone Membership Plan and its sales campaign. The new type of membership, which carries with it life membership in the PSA, was designed to finance the purchase of the new headquarters building in Philadelphia.

The campaign has been highly successful. Up to August 1st, 160 Cornerstone Memberships had been taken out, from which the Society had received approximately $25,000. Many are paying the $200 membership fee in quarterly installments over a two-year period, so additional funds will be received during this year and next as these installment memberships become fully paid.

The number of Cornerstone Memberships is strictly limited to 250, and it is hoped that by the close of 1951 the full number will have been sold and sufficient funds will be on hand not only to cover the purchase price of the building but to finance certain alterations and new equipment which are considered very essential to bring the new home to top efficiency.

In accordance with the original plan, each Cornerstone Member has received a handsome emblem — a small, solid gold Cornerstone carrying the PSA insignia. He has also received an appropriate Certificate of Membership. The names of all Cornerstone Members have been engrossed on an Honor Roll on display at headquarters. At present this is in a more or less temporary form, but when the full 250 memberships have been taken and the list closed, the honor roll will be made in more permanent form.

There are two other projects which offer a fine opportunity for sponsorship, namely an exhibition room for the permanent print collection and quarters for the PSA library. It is hoped that during the coming year individuals or groups will be found who will sponsor these two splendid projects. The Committee will be pleased to discuss details with anyone interested in them.

The response to the Cornerstone Membership Plan has shown a great faith in the future of PSA, and has done much toward placing the Society on a firm financial basis.

Stuart M. Chambers, Hon. PSA, *Chairman*

Members' Service

The Members' Service (and Camera Clubs) Committee during the past season continued its development of additional services and benefits as follows:

Instruction and Special Print Sets for Club Programs: New sets were added and though we have only half the estimated minimum number of such sets, they are being added now at a rate which is enabling us to keep up with requests. There were approximately 140 bookings of these sets during the season.

International Print Competition: This was overhauled at the beginning of the season. Medals replaced the previous certificates, print criticisms were initiated for all entries; a complete report issued each contest; reductions in time lapses effected; and the competition made available to oversees PSA clubs. Number of participating clubs increased 20%.

Club Print Circuits: After development by the committee, these were transferred to the Pictorial Division for maintenance.

2nd Annual Club Bulletin Competition was held, with an increase of 35% in the number of entries.

Master Mailing List: New during the season was the origination of a master mailing list for black-and-white exhibitions. The list will be expanded during the coming season to the same effectiveness as the corresponding list in the Color Division.

Who's Who in Photography: Also started during the season was a "Who's Who in Photography" to cover the black-and-white field as color and nature are covered by the corresponding Divisions already.

Camera Clubs Bulletin: The committee continued to issue this bulletin because of its effectiveness in servicing clubs not receiving Division bulletins.

New Club Membership Application Forms were prepared listing in tabular form the club services now available.

Various suggestions (such as a Division for Beginners) were submitted to the committee during the season. Some of these were accepted or modified; others are under consideration.

H. J. Johnson, APSA, *Chairman*

National Lecture Program

Since the fall of 1949, there has been a number of successful lecture tours sponsored by the National Lecture Program Committee in conjunction with the PSA Program of service to camera clubs. Through the tireless efforts of P. H. Oelman a fine tour was arranged throughout the West and Middle West with "Pops" Whitesell as the Lecturer. Twenty-two cities were visited on this tour and the response has been great.

During the winter and spring, a tour of Ralph Gray, APSA, was arranged. Ten cities in the South, Southwest and Middlewest were visited. Large groups greeted Ralph at his various stops and enthusiastic letters have been received, indicating considerable interest in amateur movies has been created.

In the spring of 1950, Mrs. Lorena Medbury of Armington, Illinois, made several lectures in the Middlewest, showing her fine library of nature and travel color slides. Letters have been received attesting her ability as a lecturer.

Dave Darvas, of Cleveland, has recently concluded a brief lecture tour in the South. Fine response has been indicated in reports received. His lecture covers the field of photographic control methods. A tour is being planned at the present time for "Pops" Whitesell through the Eastern and Southeastern States for the fall. A number of other capable speakers have indicated interest in planning tours for the fall and winter. Sincere thanks are extended to the following active members of the National Lecture Program Committee who have cooperated immeasurably in making these tours a success.

H. Jack Jones, of Montgomery, Alabama.
Newt Conley, of Oklahoma City, Okla.
P. H. Oelman, of Cincinnati, Ohio.

The National Lecture Program Committee solicits the cooperation of all camera clubs in responding promptly to letters concerning planned tours.

Efforts are being made at the present time to prepare a complete list of capable and available camera club lecturers on area basis. This will be supplied, when completed, to clubs that are members of PSA.

EARLE W. BROWN, APSA, *Chairman*

Publications

Just as a camera possesses a number of different controls, so does a publication. The PSA JOURNAL that you read each month is responsive to the following controls and influences:

1. The membership of the Society—as interpreted, as expressed by communications. This might be compared with a basic camera design which influences the kind of work you can do.

2. The officers of the Society, the various top level committees of different Divisions (Photo-Journalism, Technical, Pictorial, Color, etc.). One might compare this influence, which includes budget influence, with the camera's mechanical controls: lens opening and shutter speed.

3. The policy, suggestions and operational advices given to the magazine by the Publications Committee. At its best, this might be compared with the focusing mechanism.

4. The day-to-day and page-by-page and issue-by-issue editing of the magazine. In practice, in final results, this is the function of the Editor—but also in practice and reality, it depends upon the cooperating special editors (of the supplements, for example) or of the contributors. (Thus every PSA member is a potential contributing editor.) It is not going too far into the figure of speech to compare the task of the working editors with the function of the viewfinder on a camera. The viewfinder is the camera—it cannot take better pictures than the finder sees. The aim, the angle, the selection, the timing—the completeness and the whole picture, depend upon the way the viewfinder works.

So much for a description. During the past year it has seemed to the Publications Committee that PSA JOURNAL must live, and grow, and function as:

a. A member of the publishing world. The JOURNAL is non-commercial, but it competes with vulgar, expert, professional, creative, crass, corny, and *living* publications all around it, i.e. the competitors are *both* good and bad. This competition is for your time—as a reader, or for advertising—or for a reputation as a top-rank journal. There already exist beginners' instruction magazines, salonists' magazines, semi-cheesecake magazines. *What can and should PSA* JOURNAL *do that needs to be done in photography?*

b. The monthly visitor of PSA—one of the most tangible results that a PSA member gets for his annual dues (nor does this deny that every other purpose of PSA, in technical fields, in fellowship, in artistic ideals, in the use of photography, must be well served by the JOURNAL). The members' most frequent contact with PSA may be the JOURNAL—it is therefore a vital asset to the Society.

c. Despite all the philosophies underlying it—the wants, desires, interests—the ideals or the special interests—editing a publication is a pragmatic problem. There is so much money; such and such an article does not arrive on time; color engraving takes so much and so much of the budget; many fine writers write mainly for money—and so on.

I mention these influences and these parts of editing for the PSA JOURNAL now finds itself in a special position. *It has gotten to such a high standard* (in the expressed views of the Publications Committee, and this is the report of the Chairman) that *it must improve still more*. There is no retreat. Vigorous membership participation, a more carefully selected scene upon which to focus, a higher pitch of *interest, editing technique, scope*, and awareness of the expanding world of photography—these must be the PSA JOURNAL's future, as this Committee sees it.

So our real report is that the *future needs working on*, by a lot of people.

Yes—we've spent $4,600 on an average issue of the JOURNAL. $2,700 comes in from ads.

JOHN R. WHITING, APSA, *Chairman*

SPECIAL COMMITTEES

Foreign Circuits

The Foreign Circuits Committee reports that it feels confident of soon receiving most of our South American prints back.

JOHN H. MAGEE, *Chairman*

Library and Historical

There has been no activity on the part of the Library and Historical Committee as a whole. However, the Chairman has spent considerable time in drawing up proposed plans for a library in the new PSA Headquarters building, and in obtaining costs of equipment, supplies and installation.

There is adequate room at Headquarters to house a moderate sized basic library, including provisions for future moderate expansion. With sufficient financing, a library such as is contemplated should be a very important and useful means of service to the Society's membership throughout the United States, as well as in Philadelphia.

According to the plan, duplicate books and unbound periodicals which PSA now owns or will acquire, will be used on a loan basis for members outside the Philadelphia area. Also, later, perhaps periodical articles and parts of books can be microfilmed, upon request for a loan, in cases where the borrower has access to a microfilm reader, or where he himself is equipped with a projector suitable for handling miniature strip film.

The library, in the opinion of the Committee, should be a basic working one suitable for use by the practical photographer. No attempt should be made, they believe, to build up a scientific research or extensive historical library, nor to complete all periodical issues back to the beginnings, when these go back beyond 1930. To strive for such an extensive library would be both expensive and impractical. There would not be sufficient room to house it nor enough attendants to take care of it, and the estimated number of persons who would use it would not be sufficient to warrant the trouble and expense.

Sketches have been made as to the possible layout of the proposed Library and are now in the hands of the Headquarters Committee and the Board of Directors. The detailed estimate of cost accompanies these sketches. A brief, less-detailed resume of the cost estimate (allowing for discounts) is as follows:

Sectional Bookcases and Library Book Shelf Units	$ 1,112.00
Storage Cabinets	155.20
Typewriter Desk and Tables	270.60
Letter and Card-Index Files	250.80
Chairs	332.20
Storage shelving	179.98
Magazine Rack and work table	150.06
Stationery supplies	90.78
Typewriter	171.82
Estimated cost of lighting equipment and installation	750.00
Estimated cost of binding periodicals	1,500.00
Estimated cost of printing book plates	25.00
Total	$4,988.44
Estimated cost of a part time librarian for 3 years	4,500.00
Grand Total	$9,488.44

It is to be hoped that a generous donor will be found who will be willing to provide $10,000 for this worthy project, and who will allow the Library to be known by his name.

At present, the PSA Library consists of an unknown number of books and periodicals which are in storage for which the Society is paying but getting no real benefit.

The cost of Library and Historical Committee operations so far, except for the storage just mentioned, has consisted of postage on not a great amount of correspondence and this small sum has been taken care of by the Chairman.

E. P. WIGHTMAN, FPSA, *Chairman*

Permanent Print Collection

Due to the generosity of Joseph M. Bing, who donated $100 to us to prepare slides for some of our outstanding prints, we have selected 108 prints and these latter have been shipped to Rochester, in two special constructed oak cases, where the slides will be made, as arranged under Pres. Mulder's personal supervision. The Trustees thoroughly appreciate and thank Pres. Mulder for his valuable interest in this matter.

We hope to have these slides ready to be shown at the Baltimore Convention. Additional slides will be made from time to time from our collection, which now totals approximately 670 prints. The ten Alexander Keighley prints donated by Mr. Frank Fraprie have arrived at headquarters and have been added to our collection.

WARDLAW McG. HAMMOND, *Chairman*

Print of the Month Contest

This contest got under way in the spring of 1950 and each month we hope to have larger entries from both the advanced and beginners groups.

The first couple of months entries were judged by Philadelphia judges but starting with the September Contest, the prints will be routed to different sections of the country and local PSA groups in those cities are making the arrangements for competent pictorial judges.

The bronze and silver medals that are given in each class to beginners and advanced workers each month are really outstanding and made a big hit. It is recommended that the beginners be not afraid of sending in their prints as there is plenty of opportunity for anyone to win. It is also recommended that the advanced workers do not overlook this opportunity of additional recognition and the addition of these attractive medals to their other honors. Let's have a big entry every month, and enter each month rather than just once.

WALTER G. ALLEN, *Chairman*

Special Awards

This report is intended to supplement and bring up to date the Annual Report of the Special Awards Committee published in the October 1949 issue of PSA JOURNAL.

Since last year, the Society has created a new award known as the SERVICE MEDAL AWARD. For rules governing this award see page 182 of the April 1950 issue of PSA JOURNAL. Recipients of these medals to date are:

Paul W. Gibbs, New York City
C. L. Herold, Houston, Texas
Robin F. Garland, Rochester, New York
Howard E. Smith, Rochester, New York

Additions to the list of previous recipients of established awards are as follows:

PROGRESS MEDAL OF THE PHOTOGRAPHIC SOCIETY OF AMERICA
1949 Winner—J. Dudley Johnston, Hon.FRPS
1950 Winner—Dr. Loyd A. Jones, Hon.FPSA

STUYVESANT PEABODY AWARD
1949 Winner—Anne Pilger Dewey, Hon.PSA, APSA
1950 Winner—To be announced at PSA Convention, Baltimore

CLERK MAXWELL AWARD
1949 Winner—Betty Springer
1950 Winner—To be announced at PSA Convention, Baltimore

The Technical Division has announced a new award to be known as the PSA Technical Division JOURNAL Award, and shall be made on the basis of the following qualifications:

1. The paper shall have been published originally in the PSA JOURNAL, its Sections or Supplements, during the preceding calendar year.

Why is the Kodak Reflex II Camera the smartest buy in the twin-lens reflex field? Check quality against price—and you have the answer.

Pick it up, and you at once sense its fine balance and dependable "feel." One glance tells you all about its trim design and fine finish. A look into the viewing hood reveals the brilliant corner-to-corner detail of the focusing image.

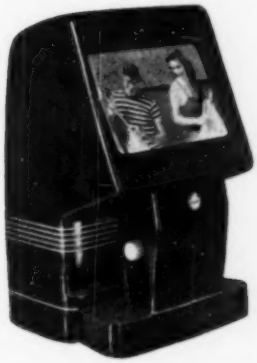
What You Can't See

You can't, of course, see the Ektalite Field Lens under the ground glass . . . the rugged die-cast light-alloy body under the tough Kodadur covering. You can't, just by looking, discover the quality built into the special Flash Kodamatic Shutter . . . or into the twin Kodak Anastar Lenses—both fine 80mm. *f*/3.5 anastigmats, *Lumenized*, and carefully teamed.

But you can note the other features—the seven shutter speeds, 1/2 to 1/300, plus "T" and "B" . . . the focusing, 3½ feet to infinity . . . the flash synchronization for both Class F and M lamps . . . the conveniently placed range and depth scales . . . the quick loading . . . automatic film stop and counter . . . viewing magnifier . . . eye-level open frame viewing as well as reflex viewing . . . easy weight, only 34 ounces . . . and, not least, the reliable name "Kodak." You can prove to yourself, item by item, that at $155 with case this fine camera is *the* No. 1 twin-lens reflex buy.

Versatile, too . . . It accepts any Kodak No. 620 roll film, color or black-and-white . . . and, with a $5 adapter, any Kodak No. 828 roll film. In short, Kodak Ektachrome Film, Kodachrome and Kodacolor Film, Daylight Type and Type A, as well as all Kodak's popular black-and-white films.

Why is the Kodak 35 Camera an outstanding buy among medium-priced miniature cameras? Simply because it offers so much quality, so many refinements and operating conveniences, at budget cost. Here is 24 ounces of superb miniature-camera performance . . . with coupled range-finder focusing (a crystal-clear, easy-to-use split-field range finder) . . . the crispness and color purity of a *Lumenized* Kodak Anastar 50mm. *f*/3.5 Lens . . . automatic film stop, automatic exposure counting, automatic shutter setting as film is wound . . . shutter speeds from 1/10 to 1/200, plus "T" and "B" . . . automatic double-exposure prevention . . . flash synchronization for both Class F and M lamps . . . in brief, every feature you expect in a fine miniature. Let your Kodak dealer tell you the full story of this able, reliable camera. $86.75.



New — The famous Kodaslide Table Viewer, Model A, now has a younger brother, the Kodaslide Table Viewer 4X (at left). Similar in principle but much lower in price, the 4X is very compact (only 7⅛ inches wide, 7¼ deep, and 12⅜ high), delivers a magnification of about 4.25 diameters from miniature slides, has a screen brightness ample for viewing in lighted rooms, operates anywhere on 100-to-125-volt AC or DC. It weighs only about 5½ pounds; is priced at $47.50. The Model A, which delivers a larger image and has built-in slide changer, is $95. See them both at your Kodak dealer's.

EASTMAN KODAK COMPANY
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Prices are list, including Federal Tax where applicable, and are subject to change without notice.

Kodak

PROFESSIONAL CALLING CARDS

Where Publishers, Professionals, Schools and Teachers may present their name, address and one line of advertising message. Rates on application to Editor, PSA JOURNAL, Kutztown, Pa.

PROGRESSIVE SCHOOL OF PHOTOGRAPHY
217 Park Street, New Haven 11, Conn.
Where photography is taught by experts headed by William Gerdes, M. Photog.

DETROIT SCHOOL OF PHOTOGRAPHY
1322 Broadway, Detroit 26, Mich.
Telephone WO 5-2745
Practical Instruction by Qualified Instructors

Duplication, Processing, Reproduction of Color Transparencies
ALEX GRANT
Box 29, Detroit 12, Michigan

2. The paper must deal with some scientific or technical aspect of the field of photography.
3. In judging the merits of the paper, three qualities shall be considered as follows: technical merit and importance of material, 45%; originality and breadth of interest, 15%; excellence of presentation of material, 20%.

A suitably embellished certificate shall be presented to the author or authors of the most outstanding paper. The 1949 winner will be announced at the PSA Convention in Baltimore.

In 1949 a special award was made available by Mrs. Constance L. Phelps, Hon.PSA, to encourage and maintain the spirit of fellowship in the Society. The rules for the PICTURES OF MEMBERS BY MEMBERS contest are as follows:

1. All pictures submitted will become the property of PSA and will be turned over to the Library and Historical Committee for retention at the close of the Annual Convention.
2. Prints not smaller than 2¼x2¼ or larger than 11x14 are eligible, including Polaroid camera prints.
3. All pictures are to be clearly labeled as to subject and maker.
4. There is to be no restriction as to the year in which the pictures were taken.
5. Prizes will be awarded as follows: 1st, $15.00; 2nd, $10.00; 3rd, $5.00.

1949 Winner—Charlotte Fredrick, Chicago.
1950 Winner—To be announced at PSA Convention, Baltimore.

GEORGE W. BLAHA, *Chairman*

NEW AIDS—Deschin

(Concluded from page 534)

8 x 10 inches to 16 x 20 at 99 cents to $3.46 per package of ten sheets.

A pint size Kodak Ektachrome Processing Kit for 120 or 620 Ektachrome roll film is now available. Two rolls can be processed in the solutions before it begins to become exhausted, although by following recommended adjustments in processing times, additional rolls can be handled. The chemicals are packaged in the Kodak foil packets recently introduced for other popular formulas. For use, the chemicals are merely dissolved in a stated amount of water. The 16-ounce kit is $1.50.

Pavelle Color, Inc., 533 West 57th Street, New York City, has a new price schedule for Pavelle Color Professional Prints (Dye Transfer process) from color transparencies. A 16 x 20-inch print, which formerly cost $105, is now $20 with a minimum order for four. Prints size 14 x 17 and 11 x 14 inches are proportionately less. In the popular 8 x 10-inch size, the price is $11 each for a minimum order for four. For larger quantities, the unit prices are lower. Service takes about ten days. All prints are salon-mounted. Pavelle also announces a one-week service on duplicates of 35mm color slides—and new prices. For one to four duplicates, the price is 25 cents each; five to twenty-four, 20 cents each, with lower unit prices for larger quantities. Larger transparencies up to 8 x 10 inches will be reduced to 35mm without extra charge.

Projection Booklet

Rus Arnold, APSA, has written one of the most interesting booklets that has come to our attention in a long time. Entitled "Picure Perfection Comes with Projection," it covers such topics as what subjects to take, what camera to use, film, light, exposure, composition, filters, etc. Several pages are devoted to slides and projection. As a matter of fact the entire text is designed to give amateurs some of the important ABC's in the preparation and projection of photographic slides.

Copies of this 20-page booklet may be had free of charge by dropping a card to Three Dimension Co., Dept. PSAJ/9, 4555 West Addison St., Chicago 41, Ill.

NEW MEMBERS JULY 1950

New Members	*Nominators*
Acklin, C. R., Santa Ana, Calif.	H. Girton
Alfonzo, A., Caracas, Venezuela	Membership
Badenkuzmich, C., Pittsburgh, Pa.	F. Quellmalz
Barakat, R., Waterville, Maine	Membership
Benjamin, R., Mackinac Island, Mich.	P. Cass
Bowron, F., Christchurch, New Zealand	R. Miess
Brown, Paul, Indianapolis, Ind.	H. Rockwell
Cianci, Mr. & Mrs. V., Chicago, Ill.	Dr. E. Chips
Cohen, David, Hongkong	Dr. Ernest To
Curtis, N., Cloverdale, B. C., Canada	R. Young
Daniels, Mrs. A., Pittsburgh, Pa.	Membership
David, B., Cleveland Hts., Ohio	E. Noel
Davis, Harold, Elmira, N. Y.	B. Little
Dendle, Henry, Scranton, Pa.	N. Hutchison
DeShazo, Don, LaGrange, Ill.	A. de Moya
Fan, Fung Ping, Hongkong	Dr. Ernest To
Fox, Holstein, Philadelphia, Pa.	T. Firth
Fuerst, Eugene, Rochester, N. Y.	J. Dessaner
Gibson, Henry, Chicago, Ill.	Membership
Harris, John, Minneapolis, Minn.	L. Hanson
Hewett, Ted, Great Falls, Mont.	C. Lingwall
Hoke, Harry, Stillwater, Okla.	J. Long
Huckin, K. E., Victoria, B. C., Canada	J. McVie
Hudson, H., Eastbourne, Sussex, Eng.	Membership
Ives, Dr. R., Stayner, Ont., Canada	S. Vogan
Jackson, Charles, Detroit, Mich.	Membership
Jensen, Jens, McCloud, Calif.	C. Browning
Johnson, C., Minneapolis, Minn.	L. Hanson
Johnson, E. R., Ardmore, Penna.	Membership
Kadoorie, Lawrence, Hongkong	Dr. Ernest To
Krohn, Herman, Omaha, Nebr.	Membership
Lauber, J., Minneapolis, Minn.	L. Hanson
Leigh, Dr. Ted, Atlanta, Ga.	C. Luce
Lockwood, F., Waverly, Penna.	N. Hutchison
MacLeod, C., Los Angeles, Calif.	M. Deaderick
Manning, Edw., Detroit, Mich.	P. Cass
McAmis, Wm., Chattanooga, Tenn.	H. Jackson
McArthur, Denning, Ventura, Calif.,	B. Dobro
Mercer, A., Winston-Salem, N. C.,	F. Quellmalz
Meyers, Francis, Huntington, W. Va.,	L. Geisel
Mier, Gmo., Mexico City, Mexico	Membership
Miller, Mr. & Mrs. R., Chicago, Ill.,	W. Fredrick
Muehlberg, R., Minneapolis, Minn.	L. D. Hanson
Naslund, Paul, Jamestown, N. Y.	Membership
Nelson, John, Hutchinson, Kansas	R. Koch
Nixon, Joseph, Kennore, N. Y.	J. Nixon
Novak, Erwin, Cicero, Ill.	Dr. E. Chips
Nowicki, A., Bloomfield, N. J.	H. Sheldon
Nyline, John, Minneapolis, Minn.	L. Hanson
Ocando, Luis, Caracas, Venezuela	Membership
Owens James, Philadelphia, Pa.	Membership
Parker, Earl, Dallas, Texas	Membership
Peterson, Leslie, Chicago, Ill.	P. Cass
Pidgeon, Mr. & Mrs. Bartlesville, Okla.,	F. Heller
Pizzi, Carlos, LaHabana, Cuba	A. DeMoya
Potts, R., San Francisco, Calif.	K. Arntzen
Prior, Marcia, Victoria, B. C. Canada	J. McVie
Randall, B. B., Orinda, Calif.	K. Arntzen
Ray, Fred, Los Angeles, Calif.	M. Deaderick
Reed, John, Nelsonville, Ohio	S. Thomas
Richardson, H., Southern Pines, N. C.,	Membership
Roberts, Edw., Central Falls, R. I.,	Membership
Roberts, Jack, Jackson, Miss.	J. Endres
Robida, Robert, Biddleford, Maine	Membership
Roper, Ralph, Waterloo, Iowa	Waterloo CC
Sampey, J., Penn Valley, Narbeth, Pa.,	H. Maugeri
Sandoval, Carlos, San Antonio, Tex.,	E. Doehne
Schneider, Edna, Hempstead, L. I., N. Y.,	R. Koch
Scott, E., Victoria, B. C. Canada	J. McVie
Smith, Allan, Sherman, Texas	Membership
Soloff, Simon, Chattanooga, Tenn.	H. Jackson
Stade, Charles, Chicago, Ill.	R. Arnold
Steele, Mr. and Mrs. W. Chattanooga,	H. Jackson
Stimson, Mrs. C., Seattle, Wash.	F. Wenzell
Stuckens, Leo, Williamstown, Mass.,	R. Hammann
Sullivan, Capt. E., Fort Hood, Texas	F. Yates
Taylor, W., N. Hollywood, Calif.	M. Deaderick
Vague, L. J., Auckland, N. Zealand	H. Larsen
Van Alstyne, Dr. W., Binghamton,	H. McDonough
Vogler, L. L., Ephrata, Wash.	Membership
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Weaver, B., Chattanooga, Tenn.	H. Jackson
Willis, J. McK., Easton, Md.	T. Firth
Wilson, R. G., Lookout Mt., Tenn.	H. Jackson
Woo, Dr. Arthur, Hongkong	Dr. Ernest To
Wood, Jack, Rochester, Mich.	J. Armstrong
Work, Mrs. R., Garrettsville, Ohio	S. Thomas
Wright, S. B., Mexico, D. F., Mexico	W. Carr

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Penticton CC, Penticton, B. C. Canada, R. Koch
Photo Soc. of Quincy, Quincy, Ill. R. Koch
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CONVENTION HIGHLIGHT

Fri., Oct. 20th — 1:30 P.M.

A how-to-do-it demonstration that's unbelievable until you've seen it done. Edward L. Bafford—"Bromoil Eddie" his Baltimore friends call him—will show you how to make bromoils—will ink them up perfectly right before your eyes. Here's an art technique made easy—for all of us.

DON'T MISS IT!

PSA TRADING POST

Open to individual members, free of charge. Limit 25 words each. Copy closes the tenth of the second preceding month before publication.

For Sale—Medalist II, leather case, perfect $179.00. Also half retail for Wratten K2, A, G, diffusion lens, polaroid filter, Eastman Portra lens 1, 3. Sunshade. R. B. Stewart, Yellow Springs, Ohio.

For Sale—70-A Bell & Howell 16mm camera with f/3.5 Taylor Hobson Cook Lens, leather case. B&H Projector with Grafoptical 2" front lens, B&H Filmo with leather case. Best offer. Stelios M. Stelson, P.O. Box 1885, Durham, N. C.

PICTORIAL DIVISION SUPPLEMENT TO PSA JOURNAL

WITH THIS issue of PSA JOURNAL we are presenting the first Pictorial Supplement.

ALTHOUGH SPONSORED by the Pictorial Division, and directed primarily toward those whose interests lie in photographic pictorialism, the contents of this Supplement have an application beyond the classification of pictorial photography. Therefore, we earnestly and cordially invite the attention of the practitioners in the other branches of our medium.

TO OUR AUTHORS, who gave generously of their time and effort, and, in certain instances, to their publishers, we express our gratitude for having made this Supplement possible.

IN FUTURE ISSUES we shall endeavor to continue our policy of bringing you diversified articles by recognized authorities—to the end that advancement in the science and art of photography may be achieved.

W. DOVEL LE SAGE, *Pictorial Editor*
DORIS MARTHA WEBER, APSA, *Asst. Editor*

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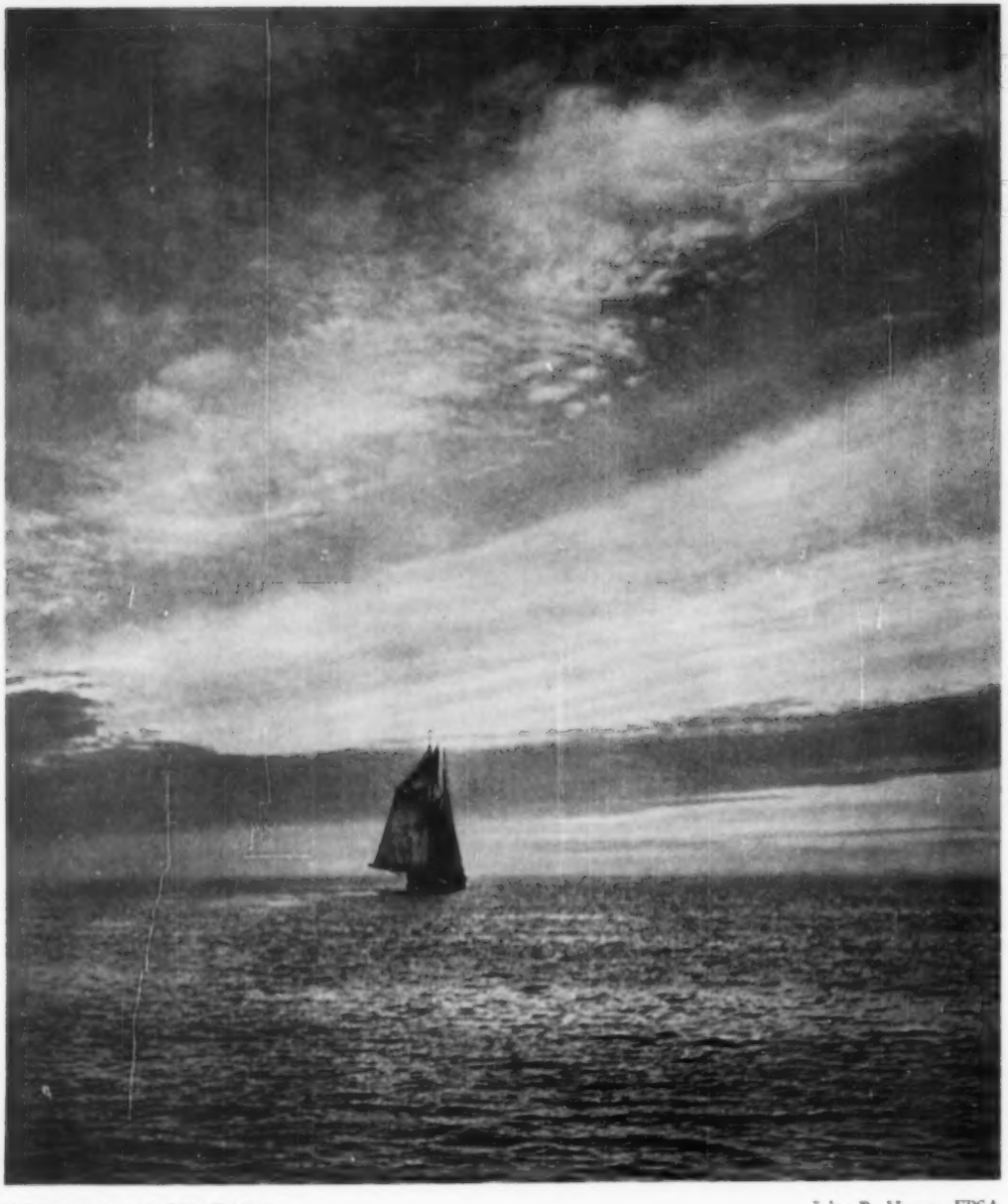


THE FENCELESS MEADOWS — John R. Hogan, FPSA

Don't Let the Salons Scare You!

JOHN R. HOGAN, FPSA

NEARLY every Pictorial Portfolio has two or three members who have tried, without success, to hang their pictures in the salons. And this is in spite of the fact that they are able to win prizes in their local camera club contests. Other members often tell them their prints are wonderful and of salon quality, and their photographic technique is good beyond question. It makes them wonder just what goes on, when their best efforts are rejected by salon judges, while other photographers whose work seems to be no better are able to make outstanding records.

Folks, let me tell you something! You can make salon pictures and hang them, too, as soon as you know just what a salon picture is; lack of success is due principally to lack of understanding. You must recognize the fact that the salons in which you are interested are *pictorial* salons, and you must send them pictorial photographs if you wish to succeed.

This brings us straight to the sixty-four dollar question: "What is a pictorial photograph?" I am going to try to give you an answer that has worked well for me and for a lot of other successful salon exhibitors. I think it will work for you, too, as soon as you really understand it and make use of it in planning your pictures. It isn't the only answer, of course, but it will do until a better one comes along. It is based on well proven principles evolved slowly over the years by different people, in different countries, in various forms of artistic endeavor.

I have checked with successful photographers, artists, sculptors, architects, musicians, writers, critics and other people engaged in the production of artistic works of one kind or another and find the general principles of success to be universal and in use by the more eminent artists in all lines. Of course, they use different words, work in different dimensions and with different tools, but the same general principles hold good. So here they are, as adapted to the production of pictorial photographs:

1. *A pictorial photograph must show a pleasing arrangement of interesting subject matter.*

Let's take up subject matter first, because it is the place where most people go astray. Your picture may be interesting to you who took the picture, to the people who know the persons, animals or places you have photographed, to those who take part in the hobby or sport you are illustrating, or who may be interested in the type of unusual or different ideas you are advocating. You and these people have a sentimental interest in your picture, but this may not hold true for the strangers who see it.

They may not care anything about the people you photograph, or the animals or the places. They may not be interested in your hobby or sport and may think your clever ideas of what is different and unusual are just a lot of silly nonsense. There are such people! This means that if you hope to interest these outsiders in what you are trying to show, you must do something to make them feel the sentiment you felt when you took the picture, or what your interested friends feel when they look at it.

You can do it, too, by making use of the little tricks of composition you already know or can learn as you go along. Don't believe the people who try to tell you that subject matter is everything and composition nothing! Their subject matter may be wonderful to them but it may leave you cold.

You need know how to make a pleasing arrangement of your subject matter, which means you must know the principles of good composition, for only by this knowledge can you build up the proper feeling in the people who see your picture, and make them enjoy it. The subject of composition is too big to be covered here, but it is all to be found in the books, and they are worth reading.

Most of you know all you need to know about composition right now, but many don't bother to make use of it. You are lazy, and go right on making the same straight enlargements and keep right on wondering why the strangers who see your pictures don't feel what you felt when you took them. You wonder why the salon judges don't like your pictures as well as your friends like them, and what you call them couldn't be printed here! So read on—

2. *There must be a center of interest, properly accented.*

Somewhere in your picture there must be a place or an object that holds more of interest than the other places or objects, and the attention of the observer must be directed toward it by making it dominant. You do this by accent, by giving it a favorable position, putting it at the end of leading lines, giving it the lightest and darkest tones of your entire print, emphasizing all the little differences to make it stand out.

If your negative doesn't show a definite center of interest, or if you are not able to create one in your print, forget it! You will have nothing but a record photograph, no matter how good your technique. While your picture may take a prize in the camera club competition, it won't hang in a pictorial salon. You have been told this many times, and you know it, but you keep right on making prints that have nothing remotely resembling a center of interest. You had better resolve to reform, and now!

3. *Extraneous details must be carefully subordinated.*

These are the eye-catchers that draw attention away from the center of interest, and the more interesting they may be in themselves, the more ruthless you must be in quieting them down. This is another of the things you

know but pay too little attention to. Camera club shows and portfolios are full of prints with white and black spots around the edges, and all kinds of things that should not be so prominent, but are. You can't expect to make a satisfactory picture for a salon or even for your camera club or portfolio unless you pay some attention to these extraneous details.

You can work on the negative with an etching knife, reducing agent, spot-tone, New Coccine or dye, or retouch it with a pencil. If you are afraid of spoiling your negative, you can do it on the print. It doesn't matter how you do it or what you use—if a spot or an area is too dark, make it lighter; if it is too light, make it darker.

There are all kinds of tools to use—knife or razor blade for etching; Farmers Reducer or any of the substitute preparations if you would rather reduce chemically; dye, spot-tone, chalk, pencil or water-color to darken areas that are too light. Until you are able to do a passable job in lightening or darkening an area that needs correction, you cannot call yourself a pictorial photographer, and you are not going to be successful as a salon exhibitor.

Many people won't do these things because they have an idea that they don't have the necessary skill, and are afraid to start. I hope you won't feel that way because it really doesn't require much skill, and what it takes can be acquired as you go along. The important thing is to make the start, particularly on your portfolio prints, where you can practice before trying it out on your salon prints.

4. *There must be atmosphere and mood.*

Atmosphere is the appearance you give your print by using all the tricks of composition and technique to recreate, in the person who looks at it, the feeling you had when you made the exposure. That is what we mean by mood—one of the most important elements of a true pictorial.

There are many moods, pleasant or unpleasant, stormy or quiet, brilliant or subdued, hard or soft, active or static, dignified or light—too many to enumerate. You can learn these tricks from the books on composition, and I shall point out a few of the more common tricks of technique a little further on. When you make full use of them you are putting something of yourself into your picture; you are creating, and your work will show the difference.

If your picture makes use of these four principles to a reasonable degree, you will have a pictorial photograph, and any picture of any subject can be pictorial if it is handled in a pictorial manner. Landscapes, seascapes, pictures of babies and children, portraits, animals and nature studies, pattern and texture studies, photograms, trick pictures, newspaper or magazine shots, illustrative or advertising pictures, scientific studies, *any picture of any subject can be pictorial if it is handled in a pictorial manner* and it will be a better picture because of it. If it is a pictorial photograph, and the technique is good, you will have a successful salon print.

When you believe you can make a true pictorial from one of your negatives, study the various ways in which you can make your print to illustrate best the things you are trying to show. First make a full-size, straight print to find out just what you have. Use a pair of "ells" to help you determine just what your picture is and how much of the negative you intend to use. Then frame it that way on your easel, leaving out any material around the edges that may detract from the picture as a whole.

Decide whether the arrangement is most pleasing as it is, or if it would look better reversed.

Decide whether to use a vertical or horizontal format.

Decide whether a large, medium or small size will look the best. Don't feel that you have to make every picture as large as possible—that is nonsense. There are plenty of small pictures, right on down to 4 x 5, that are hung in the salons, if the small size fits the subject and the print is well made and handled in a pictorial manner.

Decide whether you wish it sharp, diffused or partly diffused.

Decide whether you should increase or decrease contrast. If you need to decrease contrast and cannot handle it by your choice of paper and developer, make the necessary masks for dodging or flashing, to control contrast and subordinate extraneous details.

Decide whether you wish the print to be cold or warm in tone; whether it would look better on rough or smooth paper, and select the best combination of paper, developer and toner.

Find the correct exposure, make your prints and tone them. Do the final work on the print to subordinate extraneous details, spot carefully, and wax, if the paper is suitable for waxing.

Never show a finished print at your camera club, nor put one in a portfolio nor send one to a salon unless it is as good as you can make it.

There is a trick of printing technique you can use to advantage—one that I find myself using on every print I make—the trick of dividing the exposure into equal periods, and in each period doing a definite job of control. Suppose you would like your background to be soft and hazy. Diffuse the whole print during the *first* period. If you would like the center of the picture a little lighter than the edges and corners, sweep the center with a disc on a wire during the *second* period. If you need to hold back certain areas with a dodging mask, do this during the *third* period. If you wish to print-in towards the bottom of the print, do this by passing a card from top to bottom during the *fourth period*. If you wish to flash a certain area, do it during the *fifth* period.

You can use more or less time for each operation, and as many different periods as you like, depending on how many different control jobs you would like to carry out. You will be surprised how much you can change things for the better when you use this system. Frequently, you can make your picture with all the control you need by this simple method and you should know how to use it before trying out the more advanced control methods. Besides making better pictures, it is fun and you are doing creative work.

This article hits only the high spots, and it should be used only as a framework on which to build your own individual method for making pictures. There is so much to learn, you will be a lifetime just scratching the surface. If you learn only one fact, and really learn it, on each round of your portfolio, you will be doing well. If you have learned just one thing here, the basic principles of making a pictorial photograph, or even of recognizing one when you see it, you will be a long way ahead of the game and well on your way to success in the salons. Plenty of people have done it who have no more ability than you—the only difference is in the understanding of just what a pictorial photograph is.

Colonial Vista by John R. Hogan, FPSA

TREE PICTURES

NEWELL GREEN, APSA

THERE WILL be no quotation from the poem entitled "Trees" by Joyce Kilmer. It is better for you to know this in the beginning. Otherwise you might be like the man waiting for the second shoe to drop. With that point out of the way, let's see what there is to say about photographing trees.

Probably there is nothing in nature which does more for the pictorialist than trees. They are an integral part of nearly all landscapes and there is a wealth of material in picturing them by themselves. There are the superbly graceful trees and the old gnarled ones. There are blossom trees and autumn trees; trees in the wind and trees in the mist. The subject is one of infinite variety, but you can't just go out and spray the film around. There is a right way and a wrong way to photograph them.

You may wonder how there could be a wrong way. A tree is a tree and what is there to do but photograph it? Perhaps that's all the skilled pictorialist has to do, but unfortunately, we are not all skilled pictorialists. Judging by the countless tree pictures which clutter the portfolios and camera club shows, and even are submitted to salons, there are plenty of camera users who don't know how to take a tree picture. You see them in soot and whitewash, black trees against white skies, muddy prints, cluttered compositions and just record pictures which express nothing. Yet all of them are attempts at the pictorial.

It's easy to account for this. Trees seem to be about the first thing the beginner turns to, once the light of pictorialism dawns and he realizes that he can use his camera for something besides a snapshot of Aunt Minnie. Trees are obviously pictorial and he starts to photograph them. As his technique advances, perhaps he learns to make real pictures out of them. Sometimes he doesn't, and it is to help those who are still trying that this article is offered.

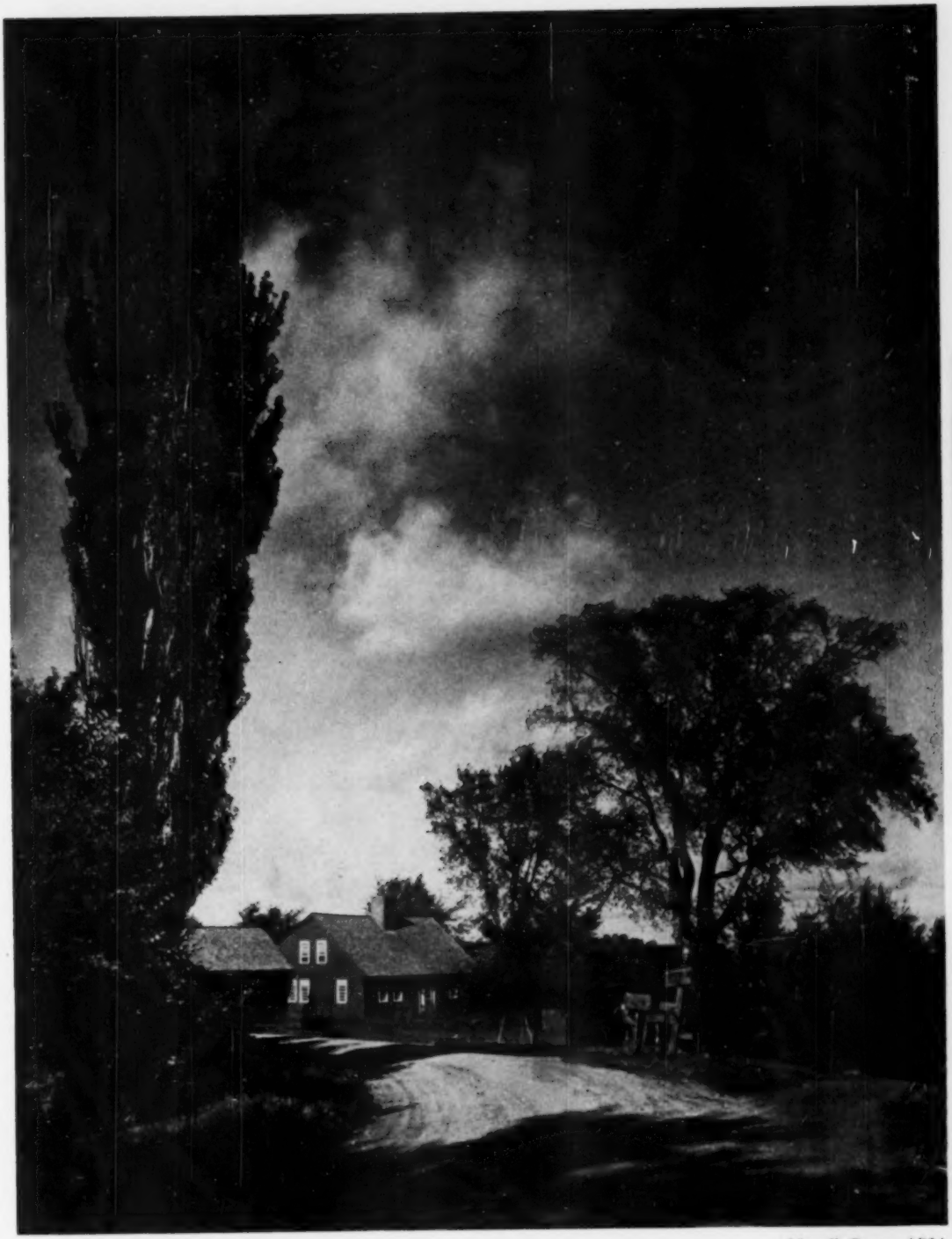
Trees are worth anybody's attention because in them are some of the loveliest outdoor pictures to be had. They can express so much when done with skill and understanding. There is the peace of a summer landscape or the bluster of a windy day. There is the afternoon sunlight on the dazzling white of a birch or the struggle of nature in the lone sapling, clinging to the crevice of a crag. They can be pictured in summer and in winter, and they abound everywhere. Still, they have to be photographed properly, if they are to mean anything.

To take a good tree picture you need to have a certain perception, "the pictorial eye," shall we call it. You should have the ability to recognize the elements of good composition and know what makes a picture. I hope you have that ability because it is a hard thing to teach. In fact, if anyone could ever discover a sure method for teaching the unseeing how to "see" a picture, his genius would be honored with a bronze bust over every hypo tray. Until such a one comes along, the best way to develop your eye is to study the work of good pictorialists. Note the sort of trees they use in their photographs. Then look around and see if you don't have some ideas of your own.

The main thing to remember is that outstanding tree pictures have to be "planned." By that I mean you plan to get them when conditions are right. The right sky, the right lighting and the right season are the elements which make the picture expressive, and it is a rare tree which can be picked off in passing, with everything just as it should be. Instead, you have to find a tree with possibilities, study it, use your imagination as to what will be the best lighting and sky, and then go back when the day is right (you hope!). The accompanying illustrations were all made that way.

The two most important factors in tree studies are the lighting and the sky. It's on these two items that the majority of poor pictures fail. One or the other isn't right and frequently it's both.

Lofty Landmark — Newell Green, APSA



HOUSE BY THE ROAD

Newell Green, APSA

MISTY RIVER — Newell Green, APSA

WINDY RHYTHM — Newell Green, APSA

The right lighting is the one that will bring out the features which make the tree appealing to you—its shape, its grace, its sturdiness, or whatever it is. Mostly that means good sunlight on the tree itself. That in turn means front lighting or oblique lighting, sometimes side lighting, but seldom backlighting, save in special instances like autumn leaves. The sunlight should emphasize the tree and not leave too many black shadows. Notice that I say *sunlight*. Even the most skillful worker has a hard time getting a good tree picture on a cloudy day.

Midday light, with the sun overhead, never brings out the tree as well as sunlight at a lower angle. Thus you will do better to take your tree pictures before ten in the morning and after three in the afternoon during the summer months. In winter it doesn't matter as much because the sun is at a lower angle throughout the day. In any case, pay special attention to the lighting. Notice the use of sunlight in these illustrations.

The sky you use is equally important. You must plan for one which will fit the particular tree you are taking. Some may demand a sky full of spectacular clouds. Others just a few gentle ones or none at all. That will be for you to decide. But the one thing you don't want is a "bald" sky. You don't even want a very light one with clouds showing only faintly. There is nothing which will make a photograph look more like a beginner's attempt than dark trees against a white sky. It's confusing, puts the emphasis in the wrong place and is seldom pictorial. It's the commonest fault among the failures so avoid it like a plague.

Remember, in photography you are using light, emphasizing with it, and the subject should be light enough to catch the eye and hold it. Lighter objects on a darker background usually make a better pictorial effect than the reverse. Granted that a tree can't always be lighter than its background (although it's usually a more striking picture when this is true), the sky should be dark enough so there won't be too much contrast between it and the tree. Moreover, even though the tree is dark, if it is done with the sun at a lower angle, there will be glints and highlights which will emphasize it. "House by the Road" is an example of this where a dark tree has highlights which are lighter than the sky tones.

In regard to clouds, a general rule as to when you should use them and when you should not might be this: the simpler the design of the trees, the greater the demand for clouds. When they are in full leaf and used as masses in the composition, you can include all the clouds you want. When they are leafless, fewer clouds are better and more often than not, none at all. Bare branches usually make the picture "busy" enough without the added distraction of clouds. "Silver Lyre" would lack the emphasis it does were the sky filled with clouds. On the other hand, "Windy Rhythm" needs them to complete the mood of the picture. It's something you will have to determine separately for each subject. But remember, by cloudless sky, I don't mean a light sky. Keep it dark enough to back up your tree.

And how do we darken skies and bring out clouds? Elementary, my dear Watson; it's all done with filters. A filter is practically a necessity for producing the right sky. I have found that a fairly dark yellow one is good for tree photography. It's not the orange or Wratten G, but one a little darker than the ordinary K2 yellow filter. Used on panchromatic film, this darker yellow renders the sky fairly dark and brings out the clouds without distorting the greens in the foliage or overcorrecting the sky, which might happen with an orange filter and usually does with a red one. However, this particular filter isn't essential and if you haven't one, the medium yellow or orange will suffice. What is more important is the exposure. Overexposure will counteract the effect you are trying to obtain with your filter, so watch out. Your negative should have a full tonal range and contrast, but the density must be kept down. Consequently, make your exposures about normal, or even a quarter of a stop under, and give the film full development.

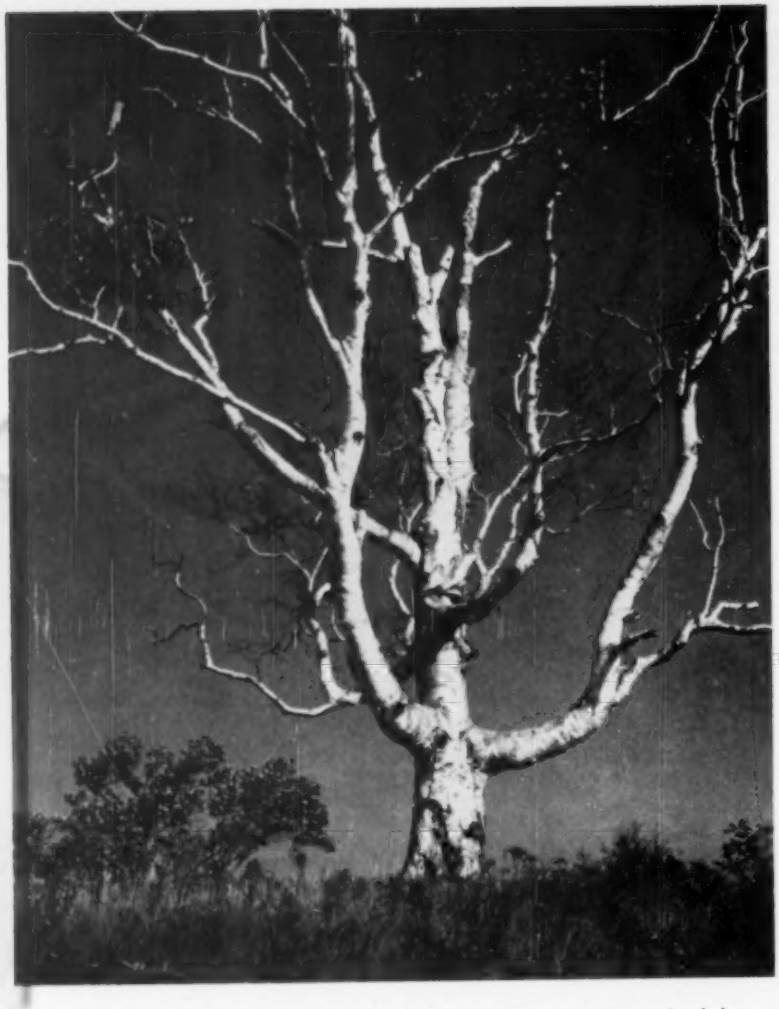
Your shutter speed should be governed by the amount of movement in the trees. With a slight movement, not too close, 1/50th will stop everything. If you use 1/10th or 1/5th, as you may want to do sometimes with a small aperture and an extended depth of field, the trees should be quite still. On the other hand, if you are catching them bent and tossed by the wind, better make it 1/200th of a second or faster because those leaves whip around at lightning speed.

It isn't easy to tell you how to look for trees which will make a picture, but there are certain things to keep in mind. Perhaps more than anything else is the adage about not seeing the trees for the forest. Make sure that doesn't happen to you. If you are taking a tree or a group of them, select a viewpoint where they stand out by themselves and aren't confused or merged with others. Look for interesting and graceful trees standing alone. If they are on a hill so you can get below them and make the background all sky, so much the better. If they're not, get close so that the horizon line is low. Be particularly careful that a line of hills doesn't cut through your trunks amidships. Keep the horizon in the lower fifth of your picture. Get close, shoot up and fill the whole negative with your tree. When you find a tree that seems to have possibilities, decide what you want to express with this particular one—grace and charm, strength and drama, a seasonal mood, or what. Figure out the time of day to give you the best lighting and determine the sort of sky you want. After that, just hope and pray that the right conditions will come along. They are worth waiting for, because a tree picture done correctly is one that really says something.

The one time you want to be on the lookout for backlighting is in the autumn when the trees have turned. Backlighting through yellow leaves will give you a dramatic effect and a chance to make pictures you can't get at any other season. "The Lamp Lighter," (see cover) for instance, portrays the brilliance of fall. Even with front lighting, yellow and orange trees produce the most interesting and unusual effects in pictures taken at that season. A medium yellow filter on pan film seems to be about right for autumn trees, either with front or back lighting.

Then let's not forget about trees in the mist—one of the most fascinating ways of treating them. Shapes seem to assume an added grace as they lose some of their detail and become veiled forms in the distance. They can be taken in the morning mists found along rivers and lakes; they can be taken in the fog found at the seashore; and they can be taken on a misty day resulting from a little drizzle, and found anywhere!

Generally speaking, you will make out better in the mist with a group of trees rather than single ones, thus getting the tonal separation of various planes. These, too, mean a little planning beforehand—knowing what you



SILVER LYRE

Newell Green, APSA

want to take and going after it at the right time. This is particularly true of morning mists, where there is a special trick to doing it just right, aside from getting up early in the morning which is trick enough for some of us! The trick is to catch your picture just as the sun starts to break through the mist, thereby giving the scene on your print a brightness and luminosity which is impossible to achieve any other way.

To do that, you must get "on location" ahead of time and wait for the right moment. The ideal procedure is to scout out your picture beforehand, say on a cloudy day to get the feeling of a composition without sunlight and shadows. Pick your scene and know just where you will put your camera. Then you get up nice and early some gray, foggy morning, go to that spot, set up and wait. Usually there will be five or ten minutes before the mist rises or blows away but when the sun will be faintly visible. That's when you want to snap your shutter. And what happens, you ask, if a fellow does go to a preselected spot at the crack of dawn and the sun never breaks through because it's a cloudy day? Well, you sue the author for a couple of hours of wasted time and go back another morning.

The technique for mist pictures is simple. Pan film usually, but no filter, as you want to retain the haze in the atmosphere. Give it normal exposure and full development, a touch of overdevelopment if anything, since the contrast in the scene will not be strong and will need a little boost. Skies are bound to be light in a mist picture, but it isn't as objectionable as in other types, because trees and foliage are lighter too. If the sky seems too white, it can be flashed a little when the print is made—you know, exposing the paper to a weak white light after printing and before development. That's what was done in the accompanying illustration, "Misty River."

But sun or mist, winter or summer, remember that your best tree pictures will be the ones you "plan" and do when the light, the sky and the season are all just right.

Individual Physiognomy & Corrective Portraiture*

FRED R. ARCHER, FPSA

UNDER THE guise of corrective portraiture many features can be visually changed or corrected to appear to better advantage.

Let us take our prying optic and starting at the brow gradually move down to the shoulders and see how many different problems beset the photographer because of the idiosyncracies of the human face. Let us also see what we can do to correct them, or more truly, to minimize them visually.

The face has been called egg shaped; it has been called a ball, and with the widow's peak on the brow has been called heart shaped. It is neither an egg, a ball nor a heart. It is a face, and as such should be considered. We need not concern ourselves with an artist's diagram of the divisions of the face; we need only be able to recognize departures from the normal when they appear before our camera, and then know what we should do to correct these conditions visually, so that in the photograph we may show our subject to the best advantage.

One of the things that will aid us greatly in our portrait work is to remember that light areas come forward and dark areas recede. This is very important in corrective portraiture.

The Plump Face

We are ofttimes called upon to photograph a very round face. If we should light this type of face from both sides we would see it at its maximum roundness and it would appear rounder and fuller in the photograph than when observed naturally. If we turn the head to a three-quarter view and light the side of the face away from the camera with a Side or Three-Quarter lighting, we have a narrow band of light and a large band of shade. As our eye seeks light and shuns shadow we have visually minimized the roundness of the face. (Figures 122 and 123) There is even the possibility of over-doing such a correction if the shadow side is allowed to go too dark, and particularly so if the outline of the head on the shadow side were lost against the background. It is seldom advisable to carry any corrective treatment to the extreme, for the person's appearance may be altered so much that the picture will not seem natural.

The shape of the face is visually influenced by the manner

*A Condensation of Chapter Sixteen in the Book "Fred Archer on Portraiture," Camera Craft Publishing Company, San Francisco, California. Copies of the book may be obtained from PSA JOURNAL at $5.75 each, postpaid.

No. 122. Straight front view with lighting from both sides shows face at its fullest.

No. 123. Turning face away and lighting for side reduces apparent width.

No. 124 thru 127. Effect of hairdress and neckline on apparent fullness of face. Hair at sides with oval neckline exaggerates fullness of face (Fig. 124). More compact hairdress with V-neck is better (Figs. 125-126). Hair high on head, V-neck with dark garment, minimizes fullness of face.

in which the hair is dressed and by the neck line of the gown worn. A hairdress that is away from the head and acts as a circular background for the face will add to the roundness of that face, while hair dressed close to the face or high on top of the head will visually slenderize the face (Figures 124-127). Further, a dress with a round neck line will emphasize any fullness of the face, while a V-shaped neck line will have the opposite effect.

The Thin Face

A thin face with hollow cheeks would be made to look very thin, or even emaciated if photographed at a three-

quarter angle that just cut past the hollow of the cheek and did not pick up the wider line of the head back of the hollow (Figure 128). Using the wider view of the head and filling in the cheeks with light from the sides so that the hollows are well illuminated will present such a subject more attractively (Figure 129). A Side or Three-Quarter lighting is called for.

The Brow and Forehead

Wide foreheads and brows will be unpleasantly accentuated if we use a high camera angle because they will then be nearer the camera than other parts of the face. A wide brow is often coupled with a narrow chin. A low viewpoint helps to minimize the brow and widen the chin.

A narrow forehead calls for a high viewpoint which will broaden it. Bald heads call for a lower viewpoint and a gentle shading back of the light on the forehead with a net or headscreen. This is especially true if the key light is coming from a high position.

The Eyes

If the eyes are closer together than normal or wider apart than normal, a three-quarter or off-front view of the head will make this condition less noticeable.

For small eyes use a Three-Quarter lighting and a three-quarter view of the head. The eyes being in shade, will open wider than in a bright light.

If the eyes are overly large or protruding it is also well to keep them in shade. A high Three-Quarter lighting is suggested. Large eyes can be helped by lowering the eyes slightly but not enough to make them appear sleepy.

Deep set eyes call for a low camera angle to give a wider span between the eyebrow and eyelid. The light should come from a lower position so that it will fill in the eye and not let them remain in shadow and the subject should be asked to look up slightly.

If the eyes are set at an uneven level turn the head slightly to one side as the natural perspective will take care of the unevenness. No special type of lighting is called for.

Bags under the eyes can be lessened by using an eyebrow pencil on the puffed portions, using short sketchy strokes over the area and blending this color with the finger tips.

Many people have crossed eyes or one eye defective. The bad side of the head in this case should be turned away from the camera until the defect is not noticeable. By lighting from the camera side and allowing the bad eye to fall into shadow the effect is minimized.

Glasses

Many people wear glasses, some very strong and some not so strong. Use a Side, High Front or Three-Quarter lighting as best fits the problem. With very heavily corrected glasses we are limited in head pose, for if the head is turned to one side the image of the cheek in the eyeglass lens cuts back and breaks the cheek line. (Figures 130 and 131).

A high, key light is usually called for so that the reflection of the light is not in the glass but on the upper rim. Lowering the head ofttimes also helps. The main thing to remember is not to let the shadow of the rim or bow of the glasses cross the iris of the eye, for in such case, even with very careful retouching, the eye usually does not look natural.

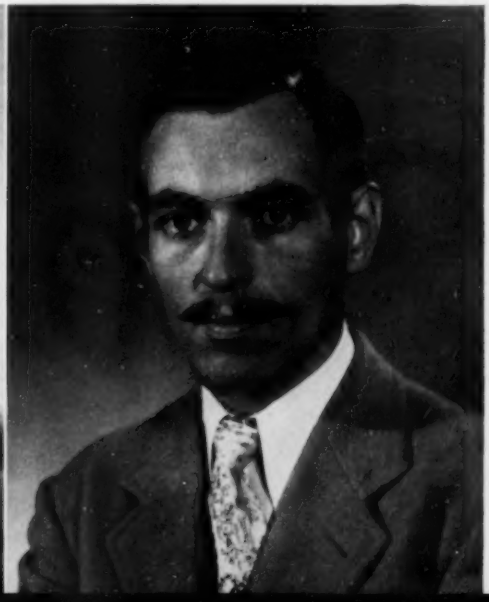
A key light coming in from the side and placed so that the shadow of the glasses is on the nose and inner edge of the eye is good, as this shadow can be easily removed by retouching, if that is considered necessary (Figure 132). In all lightings for glasses a diffusion type, or broad light, is best because soft shadows are desired.

If all light placements fail to get away from reflections, as in the case of heavily corrected and strongly curved lenses—direct all of your light onto the ceiling and photograph your subject by this indirect diffused light. The resulting picture will be very flatly lighted and will require longer than normal negative development to boost the contrast.

Photographing a person with glasses will be one of your biggest problems but one which you must work out.

No. 128. Three-quarter view is bad with thin face.

No. 129. Full, or near full front view shows thin face to best advantage.



No. 130 & 131. Heavily corrected glasses will break the outline of cheek or ear.

Cheeks

High rounding cheeks catch light and seemingly protrude farther. A low or side light is called for and a pose not too far off front face.

Wide cheeks are minimized in three-quarter view. Hollow cheeks by filling in with light. Wide cheeks can be minimized by using a dark brown eyeshadow and blending in from the jaw line upwards.

Ears

Extra small ears will look better if we can see only one and keep that in shadow. Large ears call for the same treatment and should be photographed against a dark background, and if necessary shield the ear from the light, so it does not contrast with the background.

Noses

Long noses will appear longer when photographed from a high camera angle, as we are looking at the longest dimension. A low viewpoint is called for, and a Side, Three-Quarter or Loop light. A shadow directly below the nose would have a tendency to lengthen it visually. A little dark, eye-shadow makeup on the extreme lower tip will also help to shorten the nose visually.

A short nose calls for the opposite treatment; a low viewpoint would show it at its shortest length and we would be looking up into the nostrils which would appear as dark spots in our picture. High viewpoint and high front lighting is suggested.

A hooked nose will appear longer from a high viewpoint and it will seem to cover the upper lip and make this lip seem short. A low viewpoint and front view is suggested.

A crooked nose will appear straight, or nearly so, if viewed from slightly to the side toward which it curves, so turn the head until you see the highlight on the nose at its straightest line. This will be your best viewpoint.

The use of a No. 3 finger-tip makeup to define a straight light line down a crooked nose will help to make it appear straight.

Wide noses can be minimized by using the eyebrow pencil on the spread part with short strokes and smoothly blending this color with the finger tip, or by turning the head away from front view.

The Mouth

The mouth is second only in importance to the eyes in controlling expression. Care must be taken to have it appear natural and to the subject's best advantage.

A narrow mouth can be made to appear wider by making up the lips wider than natural and turning the head slightly to one side so that the makeup is not apparent. Sometimes using the key light from a high angle will throw small shadows at the ends of the lips making the mouth appear wider.

Wide mouths can be minimized by posing the head in a three-quarter view.

If the upper lip protrudes do not leave a heavy shadow under it, as this only accentuates it.

If the upper lip is thin make it up to a new wider line so that it will be in better balance with the lower one.

Many mouths are not set square with the face and slant slightly upward to one side. A three-quarter view of the head will usually alleviate this slant and it will not be noticed. The photographer will have to watch this when the subject smiles, as many smiles tend to go up one side, and the photographer must choose the side of the face which will photograph best.

A person with bad teeth should not be allowed to smile broadly with the teeth showing. Protruding or buck teeth can be helped with a nice smile but the head should never be turned as far to the side as a three-quarter view. With protruding teeth see that the mouth is never tensed as this allows the lip to round over the teeth and creates a bulged upper lip.

The Chin

A small or receding chin is best viewed from a full front position. A light No. 4 finger-tip makeup on the tip of

No. 132. A high, key light placed to one side puts reflection on upper rim of glasses and throws shadow of glasses against nose where it can easily be retouched out if desired.

the chin, will make it appear more prominent. A low viewpoint may help.

Large or long chins call for a high viewpoint and perhaps a brown eye shadow used judiciously brought from under the jaw upon the chin to minimize the size or length.

Double chins can be thrown into shadow or the subject can lean forward and look at the camera. This will pull the double chin up and greatly minimize it without the effect of tilting the head back (Figures 134 and 135).

Jowls can be minimized by turning the body about three-quarters to the camera and then turning the head towards the front. This pulls up the loose flesh on the side away from the camera. If our lighting is from this side, the other jowl is in shadow and a little judicious retouching will smooth it out.

Square jaws will be less prominent from a higher viewpoint, because the bend of the jaw bone will be higher than the point of the chin.

The opposite of this is the correction for extremely oval faces and weak chins.

The long neck is minimized by a high viewpoint and a short one is lengthened by a low viewpoint.

High and square shoulders should be turned partially away from the camera; sagging or low shoulders are usually best from this same angle.

Scars can be minimized by letting them fall into shadow and away from the camera. A birthmark, for instance, could be entirely covered by makeup, but the friend viewing the portrait would miss it and know something artificial had been done to remove it. If it is possible to turn the head so that this birthmark is on the side away from the camera and allowed to be in shadow, even in a three-quarter view, it can be covered with makeup or retouched out and as it is in a natural shadow it will not be missed. This is a much kinder thing to do.

Where combinations appear, such as a short nose and a high brow, or a long nose and long jaw, the photographer must minimize the worst feature or emphasize the best one, and let the rest ride with a prayer and a hope.

No. 134. The double chin . . . No. 135. (Right) is minimized when the subject leans forward and looks slightly upward.

Figure 2. Mad Man

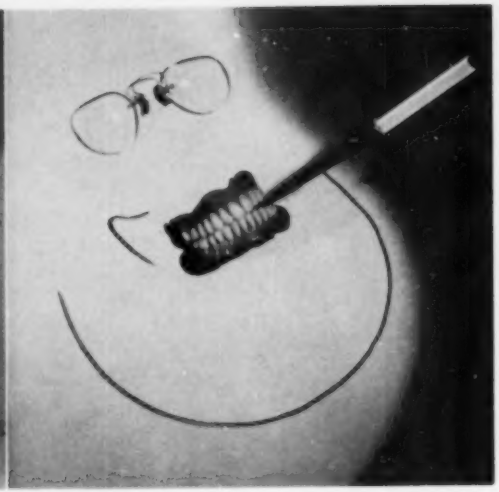


Figure 5. F.D.R.

Photo-Caricature

HARRY K. SHIGETA, HON. FPSA

ACCORDING to Webster's dictionary, the definition of caricature is an exaggerated and humorous likeness of a person or thing.

Away back in '40 when Hitler marched into Poland, the papers were full of accounts of the invincibility of the German army, along with reports of counter-moves taken by Stalin of Soviet Russia. Stalin at that time was our ally, and was not quite so unpopular as he is today.

My business associate and I were sitting in our studio kitchen, which is provided for the use of home economists, who prepare the foods for advertising illustrations, discussing the developments in Europe. As we were talking, I happened to look up and noticed several bouillon cups which were lined up on one of the shelves.

I said to my partner, "Mac, do you see the face of Stalin on the shelf up there?" He said "No." I took down two of the cups, and stacked them in inverted position. A mustache cut out of a piece of black paper, and some strips of grey paper for his hair, and I came up with the result as shown in Figure 1. You observe that a chin was needed. The chin was effected with an egg which happened to be in the refrigerator.

The secret of caricature lies in one's ability to note the most salient points of the character of the person portrayed—exaggerating those points sometimes to ridiculous proportions. Thus, if "Schnozzle" Durante happens to be the subject, his salient point, the nose, may be emphasized to a proportion of three to four times normal.

Most of the recognized cartoonists know this. In the old days they drew caricatures of Teddy Roosevelt, emphasizing his "delighted" smile and a

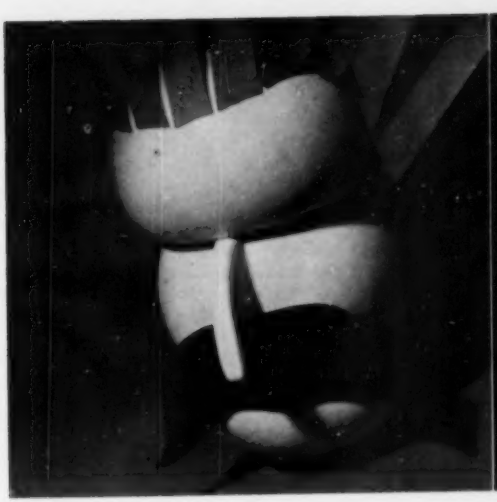


Figure 1. Joe

Figure 3. Muss

pair of eyeglasses. The rest of his face didn't matter much, as long as it had a general shape and identifiable props such as the Rough Riders' hat.

In the case of Woodrow Wilson there were the glasses and his long jaw. The same were true with Franklin D. Roosevelt, with the difference, perhaps, that Wilson had a longer face.

A few days after I made the caricature of Stalin, the egg for his chin got bad. So I used it again for Hitler by adding the slicked-down hair and a little mustache, with a background expressing the confusion then prevailing over Europe. (Figure 2)

My partner thought this was pretty good, and said I should do a series of the world leaders—suggesting Mussolini for the next subject. This was a little tougher. I tried to recall many scenes I had seen in newsreels, where Mussolini was shown addressing crowds from a balcony. I remembered that he invariably pushed his chin out and up. He always wore his fez-like cap with a big eagle in the front.

I found in a Walgreen drugstore a pair of kid's boxing gloves. By stacking them together they looked like Mussolini with his chin up. The addition of a pasteboard cap and a couple of eyes resulted in an effect as in Figure 3.

The next in line was Neville Chamberlain, then the Prime Minister of Great Britain. There was a true Englishman—austere, straight-laced and tradition-minded. You remember he always carried an umbrella.

Figure 4. Neville Chamberlain

A paper tubing, such as is used for shipping large photographs, some grey papers, a silk hat, and an umbrella gave me a complete likeness. (Figure 4)

My associate came back at me. He said, "All of the series are good, but it would not be complete without having the man of the hour—F. D. R."

It was a challenge. I got to thinking. To me, F. D. R. was so much like his cousin, Teddy. He had the same "delighted" smile and wore the same type of glasses. The only difference, maybe, the absence of a mustache and his jaw perhaps a little more prominent.

I borrowed a set of plates from my dentist, which were the ones he made to pass the examinations. These and a pair of glasses laid out on a cardboard, and a couple of lines drawn on the board did the job. Incidentally, I sent a copy to Mr. Roosevelt and got a letter from him on White House stationery.

It seems to me, with a little thought and with appropriate props, anyone can produce some very convincing and amusing photo-caricatures of people. One can pick the subjects from the field of sports, politics, entertainment, etc.

Let's try photo-caricature. It is lots of fun.

HOW TO MAKE SIMPLER AND

AN ARTICLE BY

IF ALL THE Christmas cards that are sent out each year were laid end to end, they would reach a very long distance —certainly to the North Pole, and perhaps to the moon. And as time goes on, more and more of these cards are photographic—which certainly is all to the good.

Each year the photographic magazines print excellent articles telling how to make such cards, and amateurs get busy turning them out. Some take their favorite negatives to the camera shop or corner drug store. In due time, they receive a batch of cards containing small reproductions of their photographs, plus an appropriate sentiment. Others work out elaborate and specially designed Christmas card pictures. Perhaps little Georgie is shown writing "Merry Xmas" on a blackboard, with the family grouped admiringly around. Perhaps other means are used to spell out the sentiments of the season, with various members of the family participating.

For those who enjoy working out elaborate arrangements of this kind—all this is fine. However, it is the author's belief and the theme of this article that it is possible to make Christmas cards which not only are easier to produce, but which are more personal, more attractive and far more lasting in their appeal. Indeed, you may someday see, in the home of a friend, one of your Christmas cards framed and hanging on the wall. And what a thrill that will be!

In planning simple, inexpensive and highly effective Christmas cards, we can take a tip from some people who make excellent use of greeting cards—sending them out on many other occasions besides Christmas. Such persons often buy, at stationery stores, colored cards showing reproductions of famous paintings, or attractive pictures of landscapes, children, animals, flowers, and other subjects. These they use, not only as Christmas cards, but for birthdays, anniversaries, etc. With a personal message written on the back, they are enjoyed and appreciated by those who receive them.

The photographer who desires to do so can follow the same practice. Instead of having Christmas cards printed from his negatives at the drug store, or instead of photographing some special scene or arrangement, he can make prints from one of the best negatives he already possesses, and send them out as Christmas cards. The time he will save, compared with making some special Christmas picture, he can use to print and send out more cards to more friends. Certainly that will be most desirable. An additional advantage of such cards, in comparison with the specially-made Christmas scene, is that whereas the latter is likely to lose its significance the day after Christmas, the print made from a good pictorial negative is likely to have permanent interest.

Mission Santa Clara

Interloper

"But," you may ask, "what about the Christmas mes-

BETTER CHRISTMAS CARDS

JACK WRIGHT, FPSA

sage?" You can, of course, buy special photographic paper in the form of cards, with a small space for your picture, and containing a printed greeting. I am going to suggest that you do not use such cards, but that you print your picture on ordinary double weight paper, so that the picture fills the entire card. Your name and message can be written on the back. Your photograph will be larger and better, in that way, and the message will be more direct and personal than if it were ready-printed on the face of the card.

Having decided to send out one of your pictures—covering the entire card and with the name and message written on the back—the next step is to determine the size of the card. Since this will depend upon the size of the envelope you are going to use, it is best to buy them first. Go to a stationery store and select an envelope which is almost square—such as those used for wedding invitations. Of course, if the negative you ultimately decide to use works up best in a picture that is long and narrow, you should buy envelopes of that shape. The average picture, however, looks best in a print of about the 4 by 5 proportions.

At this point you will ask yourself, "Which of my negatives shall I use?" You can use one or several. If you think it over, you probably will find that the persons to whom you want to send cards fall into about three groups: (1) your immediate family; (2) your friends who are amateur photographers also, and (3) your other friends and acquaintances. You can make one card which will appeal to all, or you can make up special cards appropriate to each group.

The cards which each of these groups would like to see may differ somewhat. Your immediate family would enjoy seeing pictures of your family. If you have small children, you probably have many negatives of them. Your friends who are amateur photographers would like to see a card which would display your ability as a pictorialist. Your other friends would enjoy the sort of pictures that usually please people in general—cute babies, dogs, cats, sentimental landscapes, etc.

It is possible, with a little thought, to make one card that will appeal to all of these groups. Let us try, first, to do this. Such a card, obviously, will need to be broad in its appeal. Therefore, as you look over your negatives, try to put yourself in the place of the average man or woman, and see what sort of picture you would like to receive.

The list of picture preferences of the vast majority of people runs something like this: (1) Photographs of babies and small children; (2) photographs of dogs, cats and other domestic pets; (3) beautiful landscapes and seascapes; (4) photographs of flowers. Somewhere on the list might be included portraits, but if they were portraits of strangers, they would have to be quite unusual and attractive. With this list in mind, you may look over your negatives to find one that is suitable for use as a Christmas card.

If you have had access to a baby or small children, you might explore the possibilities of such negatives first. While almost any picture of Junior or Sister would delight

Christmas Card Landscape

Seascape

his or her grandparents, uncles and aunts, you should remember that for a larger audience you need more than a mere likeness of the child. You will need a picture which will represent all children in general, and which even a stranger would recognize as having qualities possessed by his own son, grandson or nephew.

Doubtless, this will seem like a large order, but if you will think a little further you will find that it is not as formidable as it sounds. As you look over your negatives of children, look for one which tells a story—little George intent on play at the beach, little Susan registering solicitude over her favorite doll, even freckle-faced Joe just grinning, with two of his front teeth conspicuously absent. As you study your negatives of children, you may be surprised at how many of them seem to be typical of childhood, and would, therefore, make pictures both interesting and pleasing to the public in general.

Pictures of Pets

If you have not taken many pictures of children, you may want to pass on to the next category—dogs, cats and other domestic animals. Here, again, it is well to remember that almost any picture of a dog will be liked by someone who is fond of that dog. A photograph of Fido may be fuzzy, out of focus, and have a messy background, but if Fido is your dog, his friendliness and faithfulness will seem to shine forth from almost any picture.

To please someone who is not acquainted with Fido, however, it is necessary that your photograph make Fido appear as a good-looking and distinguished dog. Look for a negative which presents your dog or cat at its best, with an attractive appearance, a simple background and excellent lighting. If you have such a negative, you can use it for a Christmas card which will appeal to a large number of people.

The suggestions made above are applicable to all sorts of animal pictures, whether taken in your home, in the streets or in a zoo. To make a good Christmas card, a picture of an animal should be able to stand on its own merits as a photograph.

Since most amateur photographers make quite a large number of landscape pictures, it may be that your Christmas card will come from this category. The term "romantic landscape" was used a moment ago in connection with pictures which a great number of people like to see. "Romantic landscapes" are usually simple and easily comprehended—farm scenes, rose-covered cottages, groups of beautiful trees, rainy-day or fog photographs, etc. Photographs in which lovely clouds are present are liked by many people. Because such pictures as these have great popular appeal, they will give your Christmas cards a wider interest. For the benefit of your friends who are photographers also, you should select a landscape which will have good print quality.

Flower pictures, if well arranged, attractively lighted and excellently photographed, make good Christmas cards. In general, you will find such pictures easier to locate than you might expect. Flowers which themselves have delicacy and great inherent beauty make the best flower pictures for Christmas cards. These include the iris, gladiolus, tulip, etc. They should be cross-lighted so as to bring out their delicate textures. One or two flowers are preferable to a "bouquet." The background should be simple and fairly dark in tone.

It was said previously that satisfactory Christmas cards can sometimes be made using portraits. This is possible, but it is obvious that not just any portrait will do. There are few pictures less interesting to most of us than an ordinary photograph of a man or woman whom we do not know. However, if you have among your negatives a picture which shows an individual with a face so interesting and arresting that it would hold the attention of a total stranger—such a picture could be used for a satisfactory Christmas card. Make your selection with great care, however, bearing in mind what has just been said about "average" portraits of total strangers.

No mention has been made of the use of still life pictures for Christmas cards. These can be used, of course, if they are decorative and interesting. These qualities, plus good photographic technique, are the tests by which you should judge them as possible Christmas card subjects.

It may be that when you look over your negatives you will decide that you do not have one single picture which will please (1) the members of your immediate family, (2) your photographic friends, and (3) your friends and acquaintances who do not have photographic interests. In this case, you may want to select three different negatives, each having an especial appeal for a certain group. Making three different cards is no great hardship, since it means merely changing from one negative to another and working out the correct printing time.

If you so desire, you may tone your cards brown, blue, green or some other color. In that event, you may want to buy envelopes of an appropriate tint. If a toner is to be used, you would do well to decide upon it before you buy your envelopes.

If, in the past, you have been in the habit of ordering your Christmas cards with your name printed on them, you may now complain that you are going to have the task of writing your name on each card. This brings us to one of the greatest charms about the type of card we have been discussing. While it undoubtedly is easier to order ready-printed cards, stuff them into envelopes, and send them off, such cards are likely to be exceedingly impersonal. You can imagine the man or woman who has a secretary, telling the secretary to address the envelopes and mail out the cards.

Christmas cards, to be successful, must be personal and sentimental. They are sent at the most sentimental of all seasons and should emphasize the "from-me-to-you" thought.

The best possible way to let the recipient of your card know that you are thinking of him, personally, is to write a short personal message on the back of your card. "Hi there, Joe. How you doin'?" or "It was nice to see you the other day, Mary" is a lot more personal and heart-warming than "Merry Christmas from Mr. and Mrs. John J. Smith" sedately printed on the face of the card. Even "Merry Christmas" and your name, written in your own handwriting, is more pleasing and personal than anything printed and distributed to dozens or scores of friends alike.

If you feel that a plain, unornamented photograph lacks color, you can write your message in a gay-colored ink, and can place a Christmas seal on the back of the card or on the envelope.

Try out these simplified cards this coming Christmas and you will be amazed at the number of compliments you will receive.

How To Look at a Picture*

L. Whitney Standish, FPSA

A PICTURE is made to be looked at.

A statement as simple and obvious as this will probably elicit an attitude of "So what?" from the reader. Yet this harmless little statement has a great deal to do with the success or the failure of any picture. It is something to which the photographer is all too apt to give little or no consideration. He is usually so concerned with the many problems of print making, that it seems somewhat beside the point to give much consideration to the people who are to admire his little masterpiece.

"Besides, looking at a picture is a simple process," our photographer says. "One just stands in front of it and looks."

This is where he makes his big mistake. The process of looking at a picture is not simple at all; not even for the most uncomplicated personality is it simple.

The human eye does not stand still. Try keeping your eyes on some one object for a period of two minutes. After just a few seconds they begin to tire and you long to move them to some other object nearby. By the time a minute has passed it is definitely a struggle to continue staring fixedly, and in two minutes you are glad to call it off. How many times a day do you suppose you look at anything longer than a few seconds at a time? Not many. The same thing is true of the people who look at our pictures. Their eyes are restless and move quickly about. In fact, we are lucky if they spend more than a minute on our whole picture, much less any particular object in it. The only person who really stares at a picture for any length of time is the person who makes it.

If we cannot make people stare fixedly at our pictures, we can at least make them look at the parts of the picture that we consider important, and, if our subject is interesting enough and well handled, we can make them stop for a few minutes and consider its message. To do so we must know how to place objects and values in the picture space. We must also know how to control the movement of the eyes over the picture. For eye movement can be controlled by utilizing a few simple principles.

Look at a scene, indoors or out, and try to notice just how your eye travels. If you persevere and are observant, you will probably notice several things happening. These may be:

1. The eye will travel easily over contours of light or dark.
2. The eye will tend to avoid the dark sections and welcome the light sections.
3. The eye will follow any strong implied line such as several objects placed in a series.
4. The eye likes to move in a circle—looking at the object most strongly emphasized first, and then at other objects in turn—returning usually to the first object, perhaps several times.
5. The eye most naturally moves from left to right as we do when we read a book.

The above principles are really all that the pictorialist needs to know about eye travel, except, of course, how to apply them to his pictures. In application, the principles should be used with restraint since nothing is more harmful to a picture than a too-obvious or overemphasized line of eye travel. Indeed, as in so many other aspects of composition, we can say that the safest course is to avoid the pitfalls rather than to develop a too-positive scheme of design.

The eye should be led into the picture and to the center of interest

All of our pictures are composed with one or more spots of interest. In a good picture, one spot will be predominant and all the others will be, in varying measure, of a lesser degree of interest.

We should think of the eyes of the onlooker as a guest invited into our house, to be introduced to the people present, one at a time. As in a social affair, the entrance of the guest should be made inviting, with no obstacles or hazards placed in the way, and then the guest should be introduced—first to the most important person present, and then to the others in turn. Finally, the guest should be given the opportunity to return and chat for a few minutes with the important personage first introduced. In a picture, if the eye of the onlooker is encouraged to travel in a similar manner, the eye travel may be said to be perfect.

First to be considered is the means of entrance to the picture. The lower part of the picture is the most natural space for the eye to enter, since in perspective this area represents the foreground. Keeping the foreground empty allows the eye unlimited access to the picture, but this is not always feasible. Perhaps a line or two receding into the picture area will serve. One of the most effective methods of assuring good entrance is a series of lines roughly forming a curve or zig-zag. A road, a path, a brook, or perhaps a line of shadow will serve. But again—watch out that such devices are not too obvious.

One of the first compositional rules the neophyte photographer learns is to avoid placing a fence or stone wall directly across the foreground of his picture. This, he is told, is bad. And so it is, for it acts as a barrier for the eye to hurdle if it is to get into the picture. The eye is naturally lazy and does not like to climb stone walls or push through a hedge. So, if such objects intrude in the foreground, make certain that there is an easy means of getting through. If a fence be in the way, open the gate;

*This article has been adapted from Chapter 11, *Eye Travel*, from the book "Making Effective Photographs" by L. Whitney Standish, FPSA, published by *The Camera Inc.*, Baltimore, Maryland, and is reprinted by permission of the author and publisher. Copies of the book may be purchased from PSA JOURNAL at $4.95 postpaid.

Figure 1—A test print of "Waiting for the Storm." This picture suffers from an uninteresting foreground. The lack of rich values in such an area is not inviting to the eye.

Figure 2—"Waiting for the Storm," by L. Whitney Standish—In the finished print the foreground area has been darkened and on the left side, a line of light has been introduced to provide a more interesting entrance. Now the eye is easily led in at the base and up to the center of interest.

if a stone wall be the obstacle, then make sure an opening is left for the eye to walk through easily.

A foreground consisting of an area of flat tone provides about as poor a means of entrance as a foreground obstructed by deep shadows or a fence. The eye naturally seeks a line or a variation of tone as an entrance, and with completely flat values there is little that is intriguing enough to entice interest. To illustrate this I have included before and after prints of "Waiting for the Storm," (Figures 1 and 2). In Figure 1, we have a test print showing a foreground that has almost the same gray values in its entire area. In Figure 2, the finished print, the foreground has been printed to a much deeper value and some lighter values have been introduced on the left-hand side. The lighter values are the result of some very cautious dye retouching on the negative. Not only does this make a much richer print and give the picture a more solid base, but the richness of tone in this area and the implied line of lighter values has resulted in a natural path of entrance up to the center of interest.

The design should avoid lines or shapes that tend to lead the eye out of the picture too quickly

After the center of interest is reached, the eye must be allowed to observe the other objects of interest in the picture. To this end it is necessary that anything that tends to lead the eye directly out of the picture space be eliminated or subdued. Any strong line running directly to a picture edge or particularly to a corner is bad. It is almost impossible for the eye to avoid the attraction of such an exit. With too rapid an exit, the picture makes little or no impression.

Now this is not to say that having an exit from the picture is bad. Consider a picture with all the edges and corners equally darkened and thus with no natural exit. The result is irritating and distinctly monotonous. An exit should be provided—but it must not be too attractive or over-strong. However, providing an exit is no great problem. Practically any scene photographed will naturally have at least one; and usually, as stated above, the problem is not to make an exit—but rather to make certain that the exit is not over-emphatic.

Again, as with the center of interest, watch out that there is only one exit. Two of equal attraction makes something of a straddle in a picture.

The general scheme of eye travel should be interesting

Any scheme of eye travel which is effective will prove interesting. To be effective it must induce the eye to enter and then make certain that the message of the picture is conveyed and finally allow the eye to depart easily. However, we are most interested in anything that we have to work a bit to understand. So it is with eye travel. The most subtle is the best.

Too straight a line of eye travel can be most uninteresting. The eye does not appreciate travel along a straight line as much as it does a curved line. In Figure 3, we have a picture of a snow and ice covered stream with a strong line of light making a natural travel. Such a straight line is not only poor from the standpoint of eye travel, but it also throws the picture out of balance. In Figure 4, "The Frozen Stream," we have the finished print which is much improved as regards eye travel and balance. The emphasis of light has been shifted slightly to the left. This was accomplished by applying New Coccine on the negative to the light area in the very center of the picture. This area was thus lightened and the too light area to the right was darkened by dodging during the printing. The burning is very simply accomplished by cutting a hole in a piece of cardboard and using this as a dodging device, thus allowing only this area to print in darker than the remainder of the print.

Perhaps the most interesting eye travel is generally circular in shape. Such a line of visual appreciation means that the center of interest is revisited several times and thereby gains in significance.

The proper handling of the corners of the picture will materially aid in helping the eye to move in a circular fashion over the picture area. A well-known photographer once remarked that the only thing he knew about composition was to be sure to darken the corners. On occasion this is good advice and does help many a subject. But

there are other means of handling corners besides darkening them. A simple, empty corner is always effective. A tree branch, an arched opening, or any other line or mass that fills without too much attraction will be equally effective.

This discussion of eye travel can easily seem far removed from the practical reality of picture making. Even so, it is not a theoretical subject, but rather a very practical one. Almost any well-designed picture, if studied carefully, will illustrate clearly most of the points made above.

Better eye travel by means of control work

Figure 5 is a picture of a small white church, a type common to New England, but usually difficult to photograph well. Such churches are almost always surrounded by the more unpictorial aspects of our civilization, such as telephone poles and wires, automobiles, or architectural monstrosities entirely out of harmony with the simple lines of the church. In this case I was fortunate. The church was in the middle of a village green, surrounded by trees and with only a small white house in the background. But the lighting did not greatly help matters. It was nearly noon when the picture was taken. With the sun directly overhead, the shadows were deep, and although plenty of exposure was given and the contrast of the negative was kept to a minimum in development, the effect was still harsh in the test print, as can be seen in Figure 5.

The eye travel in this print was poor. A very dark shadow from the trees fell across the foreground and almost completely hid the road which provided a natural and convenient line of entry. A light area on the lower right side of the scene in contrast with the dark shadow made too strong a line running out of the picture area. The two trees on either side of the road provided a natural frame for the church steeple, but unfortunately, also made an over-strong exit for the eye. The trees were in keeping with the subject, but were much too dark and heavy, and the shadow on the grass, while not impeding eye travel, was also too heavy. In short, the subject was interesting, but had a lot of faults to overcome.

The first step was to make a graphic study of an idealized eye travel for this picture. Now while we have some pretty definite principles of eye travel as mentioned previously, it is still hard to say exactly where one's eye will go. After looking at the picture for some time, I made a tracing paper diagram (Figure 6), using very thin and transparent paper and a soft layout pencil. On this diagram is indicated in a heavy dark line, the sequence in which I believed the eye should travel. The eye should enter at the base of the picture, travel directly up the road to the center of interest, which is the front of the church. The eye then follows up the steeple to the dark tree outline and then travels along the light base of the church until once again, repelled by the dark tree at the left side of the picture, it explores the tree mass at the left. It then looks again at the center of interest finally to travel out of the picture by the exit at the right. All very well—but there was a good bit to be done to the print before the eye would behave in this well-mannered way. A list of areas to be lightened or darkened was made as follows:

Darken: Lower right grass and distant trees.
Sky area above church steeple.
Sunlight in lower left corner.

Lighten: Shadow in foreground road.
Roof of church.
Tree mass on left side, particularly trunks of two nearest trees and upper branches of dark area.
Shadow on grass.
Line of grass along base of church to left side.

Once the study was made, the application was relatively

Figure 4 (Right)—"The Frozen Stream," by L. Whitney Standish—In this print the uninteresting eye travel shown in Figure 3 has been improved by dye retouching. Note how the line of light is now broken up by toning down the right center light area and lightening the area to the left of this formerly too-bright area. The picture is now in better balance.

Figure 3—This test print shows a faulty eye travel in the line of light. The light area at the right center of the picture is too bright and is placed too near the edge of the picture frame. This results in an uninteresting eye travel and throws the picture slightly out of balance.

Figures 5 and 6 (Top)—See the text for a list of the faults that prevent effective eye travel in this test print. Figure 6 (insert) shows how the picture might be planned to provide an effective and interesting eye travel.

Figure 7 (Bottom)—"The Village Church," by L. Whitney Standish —This finished print shows how the eye travel has been improved by ground glass control work. The diagram in Figure 6 was used as a guide. The corrections that were made to improve eye travel are described in the text.

simple. The areas to be darkened were all fairly large—so they were taken care of by simple dodging. The areas to be lightened were more complex, being of various shapes and sizes. The ground glass method was used for this and proved quite suitable.

In printing, a soft working developer was used to further reduce the contrast. The final print, "Village Church" Figure 7, seems to me to fulfill pretty well the idealized eye travel diagrammed in Figure 6.

Not all pictures will require such extensive treatment to assist eye travel. Usually it is only a matter of a few areas that need alteration.

Better eye travel by means of a printed-in sky

To further illustrate the subject of eye travel, I have included one more "case history." Figure 8 is a picture of a shipwreck. It was taken in the early evening when the light was very low. The only way to get a good picture was to wait until the tide was low and the ship was thus tipped at an angle. Obviously, with the vessel completely upright, the effect of a wrecked ship would have been lost. As so often happens after a stormy day, the sky on the following day was completely clear. Since I had to take a picture so late in the day, the sky was pure white, and while it made a good record picture, with such a blank and uninteresting sky, it was not in the slightest degree pictorial.

In the course of making an analysis of this print, I realized that the picture had an excellent beginning for a fine eye travel. The eye was led very easily and naturally into the picture following the line of the white wave up to the ship. Unfortunately, with the bald sky, the eye after reaching the ship had nowhere else to go. The answer seemed obvious—print in an interesting sky that would complete the eye travel.

The problem of finding just the right sky for such a picture was not easy. The sky had to be dark in tone and it should be the type commonly associated with a storm. Further, the line of clouds in the sky should assist the eye travel and form a complete composition. Too often the clouds in a picture, while interesting in themselves, are inappropriate to the general design. After searching through a big batch of negatives, I found one with a sky that seemed to have the necessary qualifications.

The next step was to make a study of the general eye travel, taking the clouds into consideration. In Figure 9 is a diagram of the proposed design with the eye travel indicated on it. It will be seen at once that the clouds did all that I had hoped they would, as far as completing the composition was concerned. With the strong diagonal of the surf and the opposing diagonal of the ship, the line of the clouds formed an angular composition. This type of composition has a dramatic value and is therefore suited to a picture of a shipwreck. It will be seen from the eye travel diagram that it was necessary to darken slightly the left side of the picture and also tone down the sky area on the right side directly above the rocks. This was, in both cases, to keep the eye in the picture. Also the surf nearest the edge of the picture was darkened slightly to protect the edge.

The method of printing in a sky

Printing in such a sky is simple. In this case the job was made easier by the fact that the masts of the ship were very dark and so the sky could be printed right over them. The sky in the negative of the wreck was almost white so that the printed-in sky would not be too dark in tone. It is, of course, necessary that some method be used so that the sky is in nearly the same predetermined position on each print made.

With the negative of the ship and sea in the enlarger, and a piece of white cardboard secured in the enlarging easel, I framed up the wreck negative as indicated on the diagram in Figure 9. When the framing was perfect for size and position, I carefully traced off (from the projected image) on the white cardboard, the exact position of the main elements in the picture, such as the masts of the ship, the horizon line, and the line of rocks and sea. This outline on the cardboard was to be used as a means of correctly placing the two negatives in relation to each other.

Then taking another slightly larger cardboard I traced along the complete horizon line, the line between the ship and sky, and to the right, the line between rocks and sky.

Figure 9 (Above)—A visual study showing how a printed-in sky could effectively key the picture and help to idealize the eye travel. The suggested eye travel is indicated by the broken line.

Figure 10 (Above)—"Aftermath," by L. Whitney Standish —This finished print shows the improvement in the picture by printing in a sky. Now the mood of the picture is sustained by a more effective key and the eye travel is very greatly improved.

Figure 8 (Left)—This test print shows a very interesting and promising subject that is spoiled by a blank sky which leaves the picture without any effective scheme of eye travel.

No attempt was made to trace out the mast outlines. The cardboard was cut along this line, thus making an effective mask for the lower part of the picture which would later be used when printing the sky negative. The upper part of the mask was thrown away.

Now, with the sky negative in the enlarger, and with the outline cardboard drawing in place, the sky negative was quickly framed in position. Then two small guide lines were drawn on both the edges of the sky negative and on the edges of the print easel. These guide lines were merely to allow the sky negative to be brought quickly and accurately into register when it was inserted in the enlarger, with the red lens mask in place.

The next step was to make test prints for the exposure time of both the sky negative and foreground negative. When a proper exposure for both these negatives had been determined, I was ready for printing. In printing, the white cardboard with the outline of the picture was left in the easel at all times—the printing paper was merely placed over it. The following steps were taken in making the print:

1. The foreground negative was put in the enlarger and the framing was quickly adjusted by means of the outlined white cardboard in the easel.
2. A piece of enlarging paper was put in the easel and the print was made in the usual manner. The waves were held back slightly in printing and the bottom edge and the left side were both given a little extra printing time.
3. Before removing the foreground negative, the red mask was slipped in place in front of the enlarger lens and the cut out cardboard mask was placed carefully over the foreground of the print.
4. The foreground negative was removed and the sky negative was inserted in the enlarger. The red mask was still in front of the lens and the enlarger was turned on. By means of the guide lines on the negative and easel, the sky was put into correct position on the print paper by moving the easel until the guide lines coincided.
5. Then, with the foreground mask still in place the sky was exposed. Some extra printing time was given to the top and sides of the sky to aid eye travel as mentioned previously.
6. To make additional prints the entire process was repeated. Of twelve prints made, only one had to be discarded due to the foreground mask being moved during the printing.

The finished print is shown in Figure 10—"Aftermath." It is immediately apparent that printing in the sky was not only for reason of eye travel. However, without the "printed-in" sky, the eye travel is very poor and with it, it is to my mind much improved. The path of eye travel diagrammed in Figure 9 seems to work out quite well.

Good eye travel will not make a picture, but without it, a picture does not have a real chance to tell its story properly.

Figure 1—Straight print of Figure 2. Note diagonal streak in sky, spotty highlights in water at left, weakness of right foreground, and dull tone of steamboat.

Figure 2 (Top)—Sunshine and Smog—By O. E. Romig. Sky has been darkened and diagonal streak camouflaged by addition of smoke. Highlights on water have been toned down; right foreground has been darkened and unified, and boat lightened by reduction on the print.

MY INTRODUCTION to this process came in 1942 and 1943 when Thomas O. Sheckell was in Pittsburgh, judging the Pittsburgh Salon. In each of these salons one of Sheckell's invitational prints was designated as a "mediabrome." He was kind enough to explain to me something about the process and how he discovered that it was the same as Leonard Misonne used in producing dramatic sky effects in landscapes and street scenes, for which he was so justly famous. Since Misonne's work was my ideal, and as Sheckell's prints were "out of this world," I decided to tackle the process in spite of the fact that I knew Misonne and Sheckell both were artists, and I had not had any formal art training.

Sheckell had published in the January 1942 issue of *Camera Craft* a brief resume of the process, with illustrations of dramatic sky effects. Grace Hooper also published in the November 1943 issue of *The Camera* a description of the process, which she called "mediobrome." This latter spelling now seems to be favored, as it has been used also by Eleanor Parke Custis, FPSA, in her book, "Composition and Pictures" (American Photographic Publishing Company, 1947), and by L. Whitney Standish, FPSA, in his

The Mediobrome Process for Print Control

O. E. Romig, APSA

book, "Making Effective Photographs" (The Camera, Inc., 1949).

I was able to learn the essentials of the process from the descriptions given by Sheckell and Hooper, and it has proved very useful, especially in toning down unwanted light areas or extraneous details which have a habit of showing up in an otherwise desirable composition in Pittsburgh industrials. Also, I add smoke to an industrial picture when I desire it, since, of late, the smoke ordinance has been effective in eliminating some of the smoke which adds pictorial accent.

The use of mediobrome helped to increase my percentage of salon acceptances. Actually I find that very few of my negatives can be printed straight or with dodging only. Most of them require some sort of control, if the scene is to be portrayed as I saw it. The mediobrome process is not difficult, and here is how I do it.

Materials

Artists' oil paints. The following colors, when properly mixed, will match blue, sepia, warm black and selenium toned prints satisfactorily: Ivory black, lamp black, cobalt blue, Van Dyke brown, raw umber, Indian red and zinc white.

Cheese cloth, pieces of nylon or rayon stockings, or absorbent cotton, for application.

Q-tips, purchased from your drug store, or homemade with toothpicks, etc. and cotton, for small applicators.

Artists' meglip, when available, or if not, linseed oil alone or mixed with mastic varnish, for mixing.

Mastic varnish.

Marshall's or Eastman's oil coloring medium.

Torch's print wax. (Jos. Torch, 147 W. 14th Street, New York 11, N. Y.)

Turpentine.

Palette, either commercial or improvised, for mixing.

Palette knife or wooden stick, for mixing.

Artists' sable brush, No. 0 or No. 1.

Plastic rubber eraser—A. W. Faber No. 7815.

The two last items are desirable for the application and removal of pigment in localized areas.

Type of Print

Any dry, flat photographic print of not too smooth a surface is suitable. Velour Black DL, Opal G or B, Platino G, and Cykora Kashmir are all easy to work. Matte or rough surfaces also are satisfactory, but glossy surfaces are rather difficult to use, and if they must be employed, they should not be ferrotyped. The print should be on the snappy side, as the process tends to make a flat print look flatter.

I usually spot the print before processing it, although spotting with the oil paint can be done after the print has been processed, if preferred. Dyes or water colors are convenient for spotting, as they are taken up well by the photographic emulsion and do not rub off during the oil paint treatment. If pencil spotting is employed, the print must be steamed over a teakettle to fix the graphite in the gelatin emulsion, else the spotting will be removed by the oil paint mixture when it is applied.

I prefer to mount the print before working on it, so that it can be handled more readily, but on occasions I have processed unmounted prints by affixing them to a plywood board by tape or thumbtacks. The print should be smoothly mounted, as any roughness or cracks in the emulsion will show up in the finished product.

Figure 3 — Straight print of Figure 4. Note lightness of wall in foreground, white areas of window, bright light fixture, sun on deck at right, bright spot above right hand student's head, lack of printing on page of open book, and disconcerting bright spot directly in front of girl's nose.

Figure 4 (For right) — Between Classes Lilly Court—By O. E. Romig. The light areas shown in Figure 3 have been darkened.

Pigmenting the Print

Use photographic masking tape, at least ¾ inch wide, to cover the edge of the mount so that you can work right up to the edge of the print. Although neither Sheckell nor Grace Hooper recommend it, I have found that the preparation of the print before the application of the paint makes its application easier and tends to speed the drying of the print. Method No. 1—If the print must be dried very quickly, apply a thin, uniform coating of Torch's print wax to the surface of the print with a piece of ladies' hose or a cheesecloth pad. This does not yield as tough a finished print as Method No. 2. In the latter method, mix one part of Marshall's or Eastman's medium with six parts of turpentine, or as directed by the manufacturer, and rub the entire print surface as in Method No. 1, before applying the oil paint. Regardless of the method of preparation used, be certain that the print is uniformly covered and that the medium is thoroughly rubbed into the surface of the print. Also remove all excess of the medium. This preparation seems to provide a tooth for the paint and makes a smooth application easier. If a smooth-finished paper is used, it is best to employ no surface preparation.

Now squeeze a bit of the oil paint about the size of a pea onto the palette, or, if it is necessary to combine colors to obtain the desired shade, use a mixture of paints. Mix with the paint an equal quantity of meglip, or a few drops of linseed oil, and a drop of mastic varnish, if available. Stir thoroughly with the palette knife or stick. The mixture is not critical, but should be about the consistency of Karo syrup, in order to apply easily. The consistency, however, should vary, depending upon the amount it is desired to apply. If too thin, it will be difficult to darken as much as may be desired; if too thick, it may not readily rub out to a smooth, uniform density. Practice the blending of the colors to match the print tone by trial on scrap prints of the same grade of paper, if possible. Daylight is best for matching colors, although a blue light in an aluminum reflector is a good substitute for daylight when working at night.

Dip a fresh piece of cheesecloth or bit of cotton in the mixed dope and apply generously to the area you wish to darken. It will make a terrible mess, and you will think that you have ruined your print, but if you have patience, you will be rewarded. Rub out smoothly and then take a fresh piece of cheesecloth and, starting at the areas that you want to be the lightest, rub out smoothly and work on into the areas that you wish to be the darkest. You must be persistent in this rubbing.

To lighten small areas, dab with a Q-tip or bit of cotton twisted on a toothpick, or work the plastic rubber eraser into a point and dab at the localized spot. The plastic rubber is best for very small areas such as the whites of eyes on a portrait, or other local highlights. To lighten large areas, rub with a fresh cheesecloth or a cotton pad to remove the excess paint, and then blend at the edges by careful rubbing. A Q-tip or cheesecloth soaked in turpentine can be used to make a pure white area. A skillful job of blending around the edge of such an area is necessary, to make the result look natural by avoiding a dauby appearance. An abundance of patience is a necessity. You must rub and rub, and then rub some more. Inspect your work at close range and at a distance, and modify to suit your taste. Occasionally you will find the use of the fine sable brush advantageous in darkening a local area or in applying zinc white to accentuate a highlight. If you are entirely dissatisfied with the results obtained thus far, all may be removed in a minute or two with cheesecloth moistened with turpentine, and you can then start over again.

Drying

When you are satisfied with the control work you have accomplished and are ready for the print to dry, place it in a room free from dust, and allow it to dry for four or five days, or better still—a week, if possible. If you must exhibit it at the club contest the next night, you can speed up the drying process by means of an infra red lamp. However, be careful, as this lamp, if placed too close, will cause the mounting to loosen, or it may buckle the entire print and mount. The addition of meglip or mastic varnish to the dope speeds up the drying, as does either of the two methods of preparation previously described. As will be recalled, Method No. 1 is preferable for quick drying.

Finishing

After the print is thoroughly dry it may be treated with wax or print varnish. I use a piece of discarded ladies' hose for this, as it is lintless. But beware if the oil paint is not thoroughly dry, else you may ruin the print entirely by too hasty waxing or varnishing, as the application of wax or varnish may remove the paint in spots. Wax or varnish aids in protecting the print against scratching or abrasion.

A mediobrome print will not stand as much abuse as an ordinary bromide print. Protection by offset mounting or a paper cover flap may help prevent damage. I have found that the rubbing in shipment, and handling at the salons is the most likely cause of wear. One may wrap prints carefully in tissue, but all of us know that they seldom are so wrapped when returned. Moreover, as a matter of impracticability, prints cannot be interleaved with tissue when handled at a salon, and covers are a nuisance to any salon committee. The repair of abraded prints is a problem; however, if necessary, a treatment with pumice in turpentine over the damaged area may enable you to do a repair job if you have the patience to work at it long enough and can obtain a good match of color for the local area.

General Considerations

From the foregoing description you may decide that the process is complicated and is not for you. But this conclusion really is not the right one. I have described the process in enough detail so that it can readily be mastered. I do not claim that it is the best control process. There are many others that are as efficient, and that may yield a cleaner print as the end product. However, I do believe that mediobrome is a good process for any pictorialist to use when experimenting with prints as to their possibilities—in those cases when it is necessary to subdue unwanted light areas.

It can readily be used to determine what correction should be made by another more complicated process, before starting to work on it. Thus it is a good process for exploration, even if one does not care to employ it for the final print. You may find, however, that you will like it for the finished print, as it is likely that no two prints made by this method will be identical, and therefore, each print may have an individuality all its own. Combined with the use of New Coccine on the negative, or with a judicious use of Farmer's reducer on the print, the pictorialist has a very flexible control at his command. If a particularly good print is obtained, a copy negative can be made of

Figure 5—Straight print of Figure 6. Compare with Figure 6 to observe further control possibilities of mediobrome process.

Figure 6—The straight print of Figure 5 has been modified by putting in a sky, and darkening the foreground and edges of the print.

it, and ordinary bromide or chlorobromide prints produced by the dozen—with spotting the only necessary correction. If your original mediobrome print is a bit off-color, but otherwise just as you wish it, color blind film can be used to make the copy negative. Sheckell mentions this, and I am almost certain that Misonne did it at times when he sent out many copies of the same picture.

Sheckell emphasized the usefulness of the process in building up a bald sky and adding a sky just to the liking of the artist. The word "artist" is used here advisedly, for making clouds, especially complicated ones, is not as easy for a beginner as the other tricks possible by the process. But if you will confine your first attempts to clouds of simple formation, you will be pleased with your efforts. I know of no easier way to work in clouds around trees than by the use of mediobrome. Sheckell's published specimens of this are exemplary.

Grace Hooper has shown in her article the value of mediobrome in finishing portraits and in introducing backgrounds. Rosalind Maingot of Great Britain also has used it to advantage for portraits, and has lectured before the Royal Photographic Society on her use of the process which she termed "oil finishing." She suggests allowing the mounting tissue to protrude beyond the print to protect the mount from the oil paint when finishing to the edge. This is easily removed with a knife after the print is finished.

Now a word of warning which is applicable to this as well as to all control processes. A definite plan of procedure, at least in your mind, is desirable before you start. Of course, you can change your mind as you proceed, and as new ideas occur to you, but most of us are tempted to overdo the application of control—with the result that the finished product looks false. We may, therefore, ruin a good picture by trying to improve on nature by too much handwork. Knowing when to quit is often more important than knowing where to begin. Actually, most prints need only minor corrections to make them acceptable. I am better pleased if I can obtain a print which requires minor changes in small areas only.

For illustrating what can be done with mediobrome, it seemed advisable to choose pictures which have been considerably modified by the process. Figure 1 is an unmodified version of one of my first successful exhibition prints. The negative was flat because of over-exposure and a rather flat scene, and required a print on contrasty paper. Even with this, the boat was somewhat dull, whereas I wanted it to be the center of interest. Therefore, I felt obliged to brighten the area around the boat with Farmer's reducer. The sky was difficult to print in dark enough, and a rather prominent diagonal streak shows in the middle sky area. The lower foreground is light and lacks unity with the remainder of the picture. Figure 2 shows the sky, lower foreground and highlight areas at the left darkened, and a bit of smoke added to cover the defect in the sky. Thus, the picture, although still rather busy, is considerably unified.

Figure 3 represents a straight print in which there is much to be desired. Note the light areas of the masonry wall in the foreground, light areas at the right where the sunlight was strong, and the white spot in front of the girl. These were all toned down, as shown in Figure 4, and a bit of printing was added to the book, the pages of which are blank in Figure 3. In the finished version the print has hung in the majority of the salons to which it has been submitted, although the subject matter is not of startling interest or beauty. Figure 5 is a simple fall landscape with a bald sky. This print was selected by a camera club, from about a dozen scrap prints, to work up as a demonstration. Figure 6 shows the result obtained in less than a half-hour, in which the demonstration was interrupted by many questions. The foreground and edges of the print were darkened and the entire sky built in, using a turpentine-treated Q-tip to pick out clouds, after which the edges were blended with a fresh piece of cheesecloth. The finished print may not be of salon caliber, but it does indicate the possibilities of working in a sky to suit the mood of the landscape.

If, after all this, you are still interested, I suggest that you dig out some of those old discarded prints, or make prints from some old negatives, and smear them with oil color. If you have a bit of persistence I'll wager you will find many salon possibilities in that pile of discards. A little paint, a bit of imagination, some patience, and a lot of elbow action, and presto!—you'll see potentialities you never have realized before.

The PSA Pictorial Division

W. E. "GENE" CHASE, APSA, *Chairman*

THIS INFORMATION on the PSA Pictorial Division has been prepared to serve as a guide to all our members, new and old, in their pursuit of photographic proficiency and pleasure. Read it carefully, and then keep it handy for future reference.

The best way for anyone to get full value from any organization is to take part in its activities. The PSA Pictorial Division offers many diversified activities and services to all photographers, be they Sunday afternoon "snapshooters," salon exhibitors or professional men.

All the officers and workers of the Pictorial Division are volunteers, and receive no remuneration, aside from the satisfaction of knowing that they are contributing to your pleasure.

The Pictorial Division stands ready to help *you* to full enjoyment of photography as a vocation, or an avocation.

Pictorial Division Organization

It is impossible to cover fully all details concerning each of the Pictorial Division activities and services in an article of this length, so, for your convenience, we list here the Division officers and directors. For complete information, write to the proper director, and you will receive an answer immediately.

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Membership, H. Jack Jones
Organization, John R. Hogan, FPSA
PD Honors Recom. Comm., Chairman, Robert L. McFerran, APSA
PD Convention Program, Chairman, Miss Doris Martha Weber, APSA

PSA American Portfolios

A portfolio is, in reality, a photographic "round robin." Each one is composed of 15 members scattered over the United States. Each member submits a print, with all the technical data covering its production, beginning with the taking of the picture. When he receives the portfolio he writes criticisms on the prints of his fellow members, makes an entry in the notebook, and sends the portfolio to the next member. At the end of each circuit the prints are evaluated by the Commentator—one of the distinguished photographers, salon judges, authors or teachers of photography who serve in this capacity on the portfolios. It has been truthfully stated that the list of Pictorial Portfolio Commentators reads like a Who's Who in Photography. Many problems are discussed in the notebook, and the Commentator stands ready at all times to help the members in any way possible.

Any Pictorial Division member is eligible to membership, on payment of a small service fee. Information concerning the 68 Pictorial Portfolios, as well as the portfolios on Control Processes, Monthly Pictorial, Nature, Photo-Journalism, Color Print, Medical, International Medical, and International Control Process Portfolios may be had by writing to E. R. Christhilf, Hon. PSA, APSA, 800 Davis Street, Evanston, Illinois.

Star Exhibitor Portfolios

These portfolios are for holders of the four grades of the PSA Award of Merit. They operate like the Pictorial Portfolios, except that the prints are full salon size and there is no Commentator. There is a nominal service charge for necessary handling costs. For information, address your inquiry to E. R. Christhilf, Hon. PSA, APSA.

International Portfolios

International Portfolios differ from American Portfolios in that two sets of prints travel simultaneously in the United States and a foreign country. Since all members are of recognized ability, there is no Commentator.

International Portfolios are now circulating in 24 countries, with more to be added. There is a nominal service charge to defray the necessary handling expenses. For information concerning this activity, write to Miss Jane Shaffer, APSA, 5466 Clemens Street, St. Louis 12, Missouri.

American Exhibits

Eight different exhibits of 25 or 50 prints each are now available to Pictorial Division Camera Clubs. They cover a wide range of subject matter: portraits, landscapes, marines, and miscellaneous salon prints. There are two exceptionally fine shows of marines by John R. Hogan, FPSA; two all-portrait shows from the Masters' Exhibit of the Photographers' Association of America; and shows by Edward Alenius, FPSA, Louis S. Davidson, and the Syracuse and Omaha Camera Clubs.

For information, and to make reservations for your club, communicate with Fred W. Fix, Jr., 5956 Sheridan Road, Chicago 40, Illinois. There is a small service charge to cover handling costs.

International Exhibits

This activity was organized so that Pictorial Division Camera Clubs may exchange exhibits of prints made by their members, for similar exhibits from camera clubs in foreign countries. There is no fee save a small service charge to defray handling expenses. For full information as to available shows, write to Dr. Glenn Adams, 9 East Third Street, Cincinnati 2, Ohio.

Portfolio Camera Clubs

To become a Portfolio Camera Club any club may qualify by having half or more of its members—at least eight—enrolled in portfolios. When the club is organized, the Director of this activity obtains the cooperation of a distinguished pictorial photographer to act as club sponsor. Members send prints at intervals, and receive detailed written analyses of their work and how to improve it.

A special plan—the Owatonna Plan—has been developed, so that Portfolio Camera Clubs may have their own salons at very little cost. Details of this plan, and complete information regarding the organization and operation of a Portfolio Camera Club may be had by writing to Sten T. Anderson, APSA, 3247 Q Street, Lincoln 3, Nebraska.

Portfolio of Portfolios

Mrs. Frances S. Robson, APSA, through her active participation in many International Portfolios, conceived the idea of arranging the American or foreign prints on a large surface and photographing them as a unit. The prints were to be made salon size and used for exhibition purposes. She had progressed so far with the idea, which she called the Portfolio of Portfolios, that upon her death, the activity was continued as a memorial to one of the finest and most generous members our Division has ever had.

Any Pictorial Division Camera Club may enroll in this activity and secure the loan of one of the exhibits, upon payment of a small service charge. For full information write to Dennis R. Anderson, 808 S. 11th Street, New Castle, Indiana.

Portrait Section

This section of the Pictorial Division was established to serve the many PD members who are interested primarily in portraiture, and includes a rapidly expanding group of activities and services. Foremost of these is the Portrait Portfolios of which there are now 13. The Commentators for these portfolios are distinguished portraitists —many of them professionals.

Portrait Pointers is a quarterly bulletin written especially for members of the Portfolios. It is furnished to them free, but may be had by other PSA members for 50c per year.

Each month a portrait by a portfolio member is analyzed in *The Folio* by one of the Portrait Portfolio Commentators or a guest critic. This print is chosen from those sent in, for personal analysis, to the Personalized Portrait Criticism Service administered by the Director of the Section, Paul J. Wolfe, 124 Jefferson Street, Butler, Pennsylvania. All questions regarding the Portrait Section should be sent to him.

Portfolio Medal Award

One hundred bronze medals are being awarded to the first 100 members of portfolios who hang their first print in a recognized salon, provided it has first travelled in one of the Pictorial Portfolios. When you qualify for this award, notify E. R. Christhilf, Hon. PSA, APSA, giving the name of the print, the salon, your portfolio, and if possible, the circuit number. There is no charge, but the medals are being won steadily, so don't wait if you are eligible. The winning prints and pictures of their makers appear monthly in *The Folio*.

Booth Tarkington Award

After the 100 bronze medals have been awarded, the winning prints will be judged by a top-flight jury, and the print rated best by the jury will be awarded the Booth Tarkington Memorial Gold Medal, donated for that purpose by Donald Jameson, APSA, of Indianapolis, Indiana. The 100 prints will be divided into four shows, and will tour the United States to publicize the work of the portfolios.

PSA Award of Merit

The PSA Award of Merit was designed to give recognition to sustained effort and consistent participation in salon exhibiting—emphasizing a variety of prints, rather than a great number of acceptances of the same print. A certificate is awarded on presentation to the Director of this activity of a statement listing the titles of the prints on which the application is based, the name of at least one salon where each was hung, and the total number of acceptances. The four degrees of the Award are:

ONE-STAR:	6 different prints— 30 total acceptances
TWO-STAR:	16 different prints— 80 total acceptances
THREE-STAR:	30 different prints—160 total acceptances
FOUR-STAR:	64 different prints—320 total acceptances

The Awards are retroactive and are available to those who submit proof of past accomplishments. All members of the Pictorial Division are eligible for the Awards, and there is no charge. Apply to Warren W. Lewis, 2055 N. Sedgwick Street, Chicago 14, Illinois.

Camera Club Print Circuits

Any camera club which is a member of the Pictorial Division may enroll in this activity, and exchange sets of exhibition prints with other member clubs. There is a nominal service charge. For full details inquire of William R. Hutchinson, Box 367, Newburgh, New York.

Camera Club Judging Service

The Camera Club Judging Service has been established to help the many clubs that do not have adequate judging facilities for the judging of any print contests they may wish to organize. This service is available to all Pictorial Division Camera Clubs without cost, other than the transportation charges on the prints to and from the judging points. For further information, write to W. Dovel Le Sage, 501 Tenth Avenue, Huntington 1, West Virginia.

Personalized Print Analysis

Any Pictorial Division member wanting personal help with his pictures may send up to four unmounted prints, 5 by 7 or 8 by 10, with return postage and mailing label enclosed, to the Director of this activity. The maker's name and address, and all technical data and pertinent details

must appear on the back of the print. A comprehensive analysis, together with appropriate comments by a panel of prominent exhibitors, will be returned with each print. If the maker will remake the print as suggested, and resubmit it, he will receive valuable advice which will do much to improve his pictorial photography. There is no charge, but the Pictorial Division assumes no responsibility for damage or loss of prints in the mail. Send your prints to J. Elwood Armstrong, APSA, 17402 Monica, Detroit 21, Michigan.

Pictorial Division Recorded Programs

This is the most recently inaugurated of the Pictorial Division activities, but it has such great possibilities for diversion and education in Pictorial Division Camera Clubs that we expect it to attain great popularity in record time.

Experts in the various branches of photography are now engaged in preparing tape recordings of their specialties and the slides to accompany them.

There will be a small service charge for participating clubs. Early enrollment by your club is advisable, since the demand for the recordings is expected to exceed the supply for some time to come. Write to Dr. Charles F. Cochran, 3946 N. Lawndale Avenue, Chicago 18, Illinois.

Pen Pals

This Pictorial Division service will furnish you with the names and addresses of amateur photographers in any country in the world. You can form interesting and lasting friendships through such correspondence, and learn many angles on foreign methods and procedures in photography. All Pictorial Division members may avail themselves of this service without charge simply by writing to Major E. J. Hobbs, British Consulate, 1673 Union Commerce Building, Cleveland 14, Ohio.

The Folio

This is the monthly magazine of the Pictorial Division, incorporated as a part of PSA JOURNAL. It is a friendly organ—presenting news items and articles of interest to our members, ranging from letters and personal comments about the American and International Portfolios, to portrait print analyses by distinguished portraitists. Portfolio Medal winners, winners of the Award of Merit, and other announcements and information concerning the many services rendered by the Pictorial Division to individuals and clubs appear here from month to month.

If you have any contributions or suggestions for *The Folio*, they will be welcomed by the Editor, Miss Stella Jenks, 1846 Kenney Road, Columbus 12, Ohio.

Salon Practices

For a number of years the Pictorial Division has endeavored to improve the standards for conducting and judging pictorial salons. A new edition of its manual of salon practices is now being prepared. For information in regard to recognized PSA Salon Practices, and help in organizing and conducting your salon, write to Ralph L. Mahon, APSA, 260 Forest Avenue, Elmhurst, Illinois. There is no charge.

Honors Recommendation Committee

Each year at its National Convention, The Photographic Society of America awards Associateships, Fellowships, Honorary Memberships, and an occasional Honorary Fellowship to individuals who have served photography and the Society with faithfulness and distinction.

Realizing that people often are reticent about telling of their services, the Pictorial Division has a special committee which studies the qualifications of all PD members for Society honors, and submits its list of approved candidates to the Honors Committee of the Society, which makes the final decision. Recommendation by the Pictorial Division Honors Committee weighs heavily in a candidate's favor. The Chairman of this important committee is Robert L. McFerran, APSA, 1014 Maxine Drive, Fort Wayne 6, Indiana.

Salon Labels

As a special service to the many Pictorial Division members who are, or hope to become salon exhibitors, labels are now available to affix to the back of your prints. They bear the Pictorial Division eagle, and have spaces for the print title and number, and your name and address. Send a 3c stamp to Lewis T. Reed, Secretary-Treasurer, 7836 Luella Avenue, Chicago 49, Illinois, for a supply.

Pictorial Division Supplements

With this issue and in June 1951 the Pictorial Division will have an illustrated Supplement in PSA JOURNAL. These Supplements will contain articles on the various branches and phases of pictorial photography by distinguished authors and artists—each a prominent authority in his special field. Therefore, the Pictorial Supplements will have more than topical value—they will constitute invaluable permanent additions to your photographic library.

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Camera clubs, studios, business firms, stores, and manufacturers of photographic apparatus and supplies are eligible for special memberships. Ask for information. MAIL TO The Photographic Society of America, 2005 Walnut St., Philadelphia 5, Pa.

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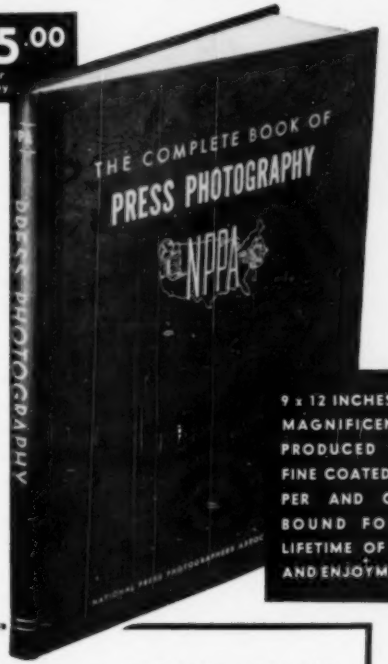

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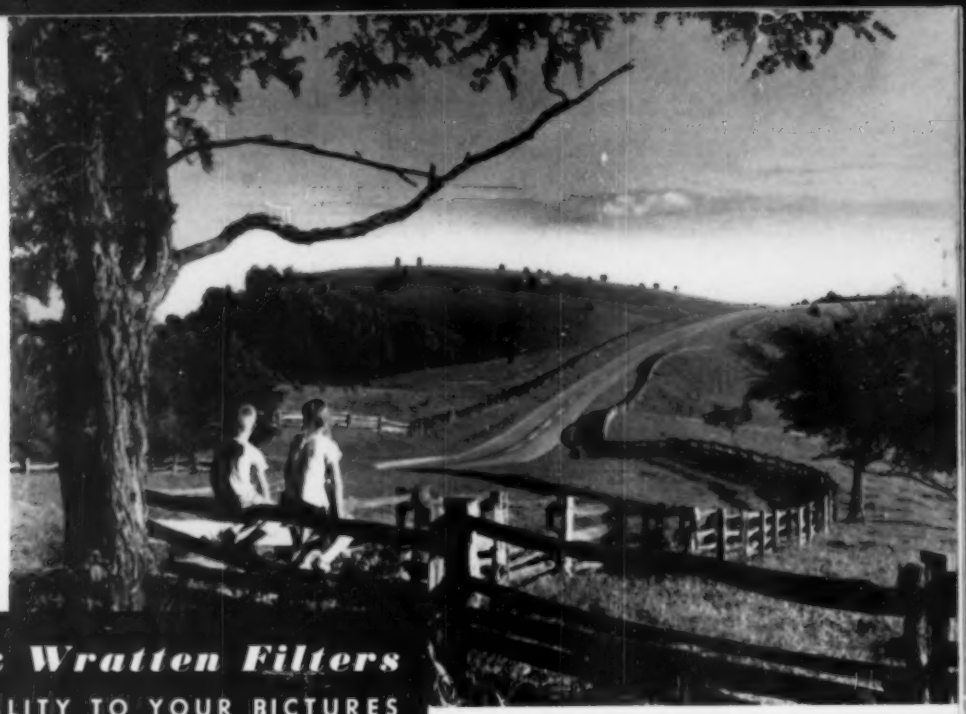

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psa JOURNAL SECTION b

PHOTOGRAPHIC SCIENCE AND TECHNIQUE

A quarterly technical supplement to PSA Journal

FOURTH ISSUE, PUBLISHED WITH VOL. 16, NO. 11, ☆ NOVEMBER, 1950

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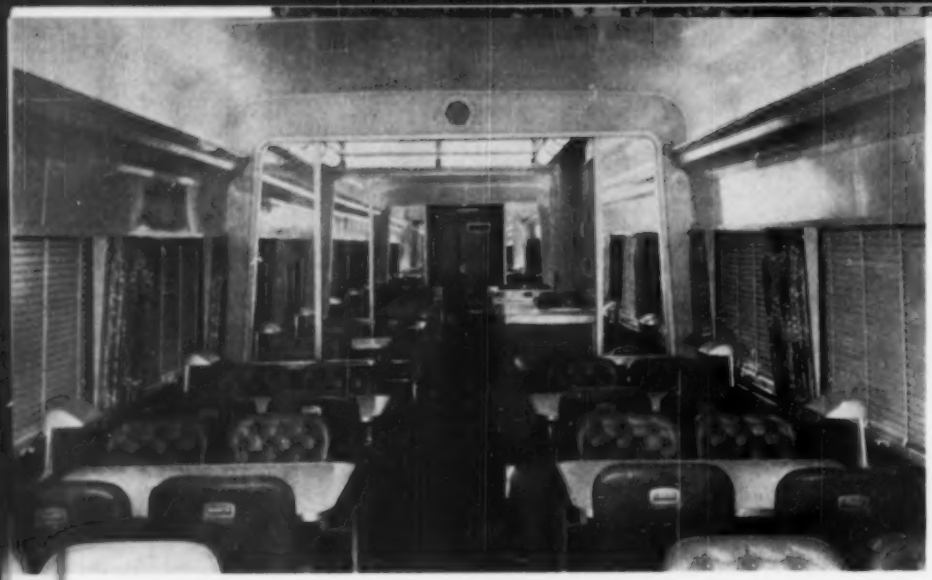

Photographic Technique for Professionals

a lighting problem and solution by experts

CORRECT EXPOSURE is the primary worry of the amateur photographer but it can be troublesome for the professional as well.

The picture above is an old story to the industrial photographer who made it. He has made hundreds like it using the lighting arrangement shown on the opposite page. "How can I get enough *more light* in this cramped space for color photography?" he asked **Photographic Science and Technique.** How can I get good light on live models down the length of the car—in color? How shall I figure out the flash exposure? How do 'guide numbers' work when some subjects are 10 feet from the camera and others are 50 feet away?"

The executive committee of the Technical Division said: "Go ahead! The title says science *and technique*. Give them technique, but keep it on a professional level."

Editorial Board members promised that individual experts from coast to coast would give advice out of their experience. Illuminating engineers and technical experts from the lamp manufacturers were asked to help. Large photographic organizations were consulted for technical information. Motion picture cameramen and technicians were interviewed.

On the following pages will be found the best of the resulting technical data and sound advice. Much of it is useful in a fundamental way for solving wholly different lighting problems. This is advice based on knowledge and experience. Photographic technique for professionals.

FINAL NUMBER OF VOLUME 16B — FOURTH ISSUE PUBLISHED WITH PSA JOURNAL FOR NOVEMBER 1950

PHOTOGRAPHIC SCIENCE & TECHNIQUE

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Individual and camera club membership in the Society, including subscriptions to both publications, may be obtained from PSA Headquarters, 2005 Walnut Street, Philadelphia 3, Pennsylvania upon payment of $10.00 annual dues. Institutional subscriptions to both publications are available from the PSA JOURNAL offices, Kutztown, Pennsylvania, at the following rates for the U.S.A. and possessions:

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Lighting Problem on Railway Car

C. W. Ackerman and R. C. Hakanson*

I BELIEVE THAT we should try very hard to convince our client that we should plan a picture of this type, not on dead center, but with the camera placed either to left or right of the center aisle, favoring the side of greater eye appeal. In a club car, for example, that might be the side with the bar. Not only will this different placement of the camera increase the *life* of the photograph but it will make the car seem more interesting and longer as well. Possibly even more important it will let us place lighting equipment uninterruptedly along the first fifty feet or so on the side which does not show.

Placing Lights

We always plan to begin our lighting with the lamp furthest from the camera. In the railway car this would entail lighting the rear wall only. Immediately we have this lamp in place it begins to serve as a key. The second lamp we start to place, planning to cover, within the useful axis of the reflector, from the far corner along one side toward the camera. We place it in relationship to lamp number one.

Either the practiced eye, or an exposure meter used skillfully, may do the job of placement to keep the light even. As lighting units are added we have to keep our level of illumination within rather narrow limits, avoiding *hotspots* as well as dark *holes*. On many of our pictures in black-and-white we place lamps entirely by visual inspection, only going over to the refinements of metering when we have color film to shoot.

Special Problems

Ceilings and floors present special problems in lighting wherever we meet them whether the job be a railway car or a foundry floor. They must be watched every foot of the way as we set up lamps. Light colored ceilings seem to pick up a disproportionate amount of light to the point where they normally print as an expressionless white. In opposite fashion many carpetings seem to "eat-up" light to the point of printing as if they were dead black. In the case of a car specially arranged for illustration we would hope to have especial cooperation from the designer to allow a floor covering of material as suitable photographically as possible.

Distance From Lamps to Subject

Naturally it will not be possible to put all of our lamps at equal distances from the opposite wall. One way to take care of varying distances from lamp locations to important parts of the picture space is the use of different types of reflectors for the same bulbs. Alternatively, different sized bulbs may be used in the reflectors best suited to them. A third method of control will employ screens, barn-doors and snoots. Neither the practiced eye nor the meter will do a job completely perfect but a combination of the two will work wonders.

What we are trying to do at this stage of the lighting arranging is the duplication of what might be called the natural or usual lighting, except that we want that same pattern at a much higher than normal intensity level. While we are doing this we will also s-m-o-o-t-h the lighting out a bit.

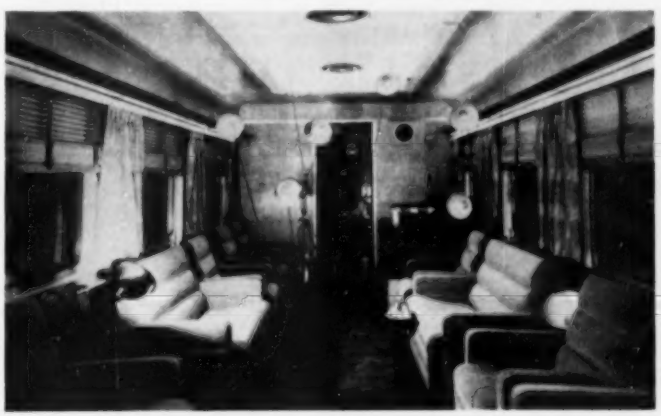
Every working photographer who keeps on working discovers early in his career that the photographic film is not as pleasantly accommodating a medium of recording as is our personal seeing system, i. e. the eyes!

This completes the first step in arranging the illustration.

Bring In The Models

After we have basic light over our scene we have to consider where we are to place our models. Naturally they must look credible. No agency rough should be taken as an excuse for a stiff or improbable series of people arranged out of all semblance to reality. We have to remember, too, that it is the intense reality on the ground glass with which we have to be concerned. That ground glass shows the view at the fixed relationship of the lens-ground glass combination and will not be true for any other combination. So let us over-simplify things by just saying we will consider model placement from a compositional and story telling angle.

As we begin placing models in the scene we also have



Car interiors are 80 to 90 feet long and 8 to 9 feet wide. Black-and-white pictures like this are made with eight to ten lamps (3200K, 500W). Not shown are three 500W lamps at floor level covering a decorative panel at the end of the car. The lamps in the foreground, turned up to show their location, are dropped to floor level for use.

*Cleveland Society of Professional Photographers and Cleveland Technical Section, PSA.

to bring into play some additional lighting equipment, for edge or three-quarter lighting. Now if you were watching the process you could scarcely refrain from an occasional "Ahh!" for this part of the operation packs the punch which will either lift the resulting photograph out of the realm of the ordinary or condemn it to the bottom drawer of "stock shots."

That Certain Touch

Surely this is the point where the artist in the photographer takes over. After a few lights have begun to make the picture seem alive he now stands off a bit and examines his creation critically. Many operators, at this point, make use of a monochromatic viewing filter to translate the colored scene into steps of one color and to emphasize variations in scene brightness by reducing the dazzling high illumination level to a level at which the eye can discriminate. It is always surprising how much difference a slight movement of a light can make. In the railway car it might be at this point that a decision is made to add a whole bank of lighting outside the car to simulate sunlight coming naturally in through the windows and creating a mood of good weather and cheer.

With the final lighting touches in place we are in position to make a short time-exposure, which should be no particular hardship on either models or photographer.

Changing from Flood to Flash

The matter of substituting flashlamps for incandescents might take up a whole Photographic Science and Technique issue to discuss. To bring it within the breadth of our story it should be enough to say that the practicing photographer has to arrive at his own set of values for his own equipment. Not the least variable factor here will be the size, kind, and overall efficiency of the reflectors he uses. Unless he is ready to let a manufacturer specify reflectors as well as bulbs I am sure that no photographer would go out on a limb very far to specify comparative values.

Guide Number Computation for Multiple Flash Lighting

R. B. MARTENSON*

THE PROBLEM of multiple flash lighting for color photography in complex interiors, such as the one presented, requires a basic knowledge of the tools being used. Of prime importance among these tools is the reflector; for it is this tool that distributes that basic element of any picture—light. At the present time, with the aid of the latest scientific developments, so called "bottled sunshine" or flashlamps are made to exacting specifications to insure the user of unerring, predictable results.

Guide numbers that are published for the various lamps are the results of formulated data worked out in compliance with methods established by the American Standards Association. Included in the guide number formula are average, weighed, reflector factors or reflector gains normally encountered with each particular type of flashlamp used. Unfortunately, reflector factors vary somewhat due to their respective beam angles or light distribution and the nature of their reflecting surfaces. Therefore, certain allowances must be made when using reflectors having characteristics that differ from those normally encountered.

*Sylvania Electric Products, Inc., Photolamp Division, New York, N. Y.

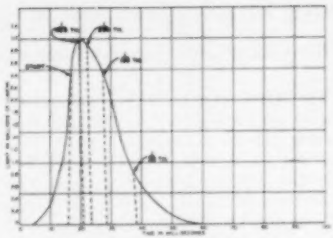


Fig. 2. FLASH LAMP #2 DATA

Class M (medium peak). Color temperature 3800 K. Light Output 62,000 lm-sec. Integrated light output at various shutter settings:

Shutter Speed	Lumen Seconds
open	62,000
1/100	37,200
1/200	21,700
1/400	1,200

Synchronization: Shutter to start opening at 16 milliseconds.

In considering the problem of properly lighting the interior of a railroad car with live subjects positioned at varied distances from the camera, it will be assumed that the photographer has selected a hyperfocal distance that will provide the best combination of focus and f/ stop to produce the depth of field necessary to meet his requirements. It will then be necessary to select the proper lamps and their placement for exacting and predictable results. First, before making this selection, it will be necessary to know the reflector characteristics.

Fig. 1 is an average satin parabolic reflector light output distribution curve showing gain over a bare lamp. Calibrations have been made for a No. 2 Superflash Lamp. From viewing the outline of the reflector curve one may take any point in the area covered by the reflector and readily compute the guide number information desired. It should be noted that the data included on this curve is listed in lumen second values although it actually represents beam candlepower distribution. For all practical purposes the values as listed in lumen seconds may be substituted in

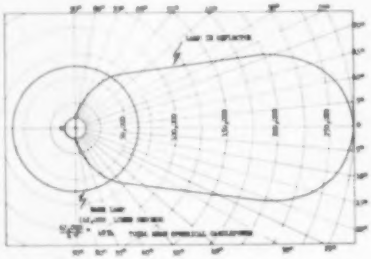


Fig. 1. Light output distribution curve for No. 2 Superflash lamp in satin parabolic reflector.

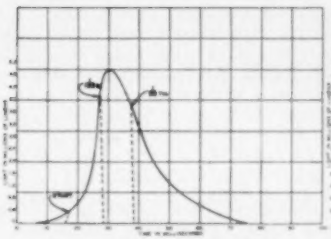


Fig. 3. FLASH LAMP #3 DATA
Class S (Slow peak). Color temperature 3800K. Light output 110,000 lm-sec. Integrated light output at various shutter settings:

Shutter Speed	Lumen Seconds
open	110,000
1/50	60,000
1/100	27,000

Synchronization: Shutter to start opening at 16 milliseconds.

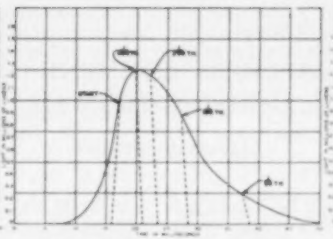


Fig. 4. PRESS 25 LAMP DATA
Class M (medium peak). Color temperature 3800K. Light output 20,000 lm-sec. Integrated light output at various shutter settings:

Shutter Speed	Lumen Seconds
open	20,000
1/100	12,000
1/200	7,000
1/400	3,600

Synchronization: Shutter to start opening at 16 milliseconds.

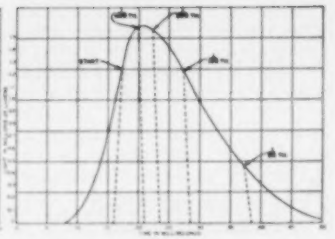


Fig. 5. PRESS 40 LAMP DATA
Class M (medium peak). Color temperature 3800K. Light output 30,000 lm-sec. Integrated light output at various shutter settings:

Shutter Speed	Lumen Seconds
open	30,000
1/100	18,000
1/200	10,500
1/400	5,400

Synchronization: Shutter to start opening at 16 milliseconds.

the forthcoming formula. An example of this computation of the guide number for the extreme portion of the reflector curve at the center of axis or 0° point when using Tungsten color film with an Exposure Index of 10 would be as follows:

$$\text{Guide Number or } d \times f = \sqrt{.005 \times L_r \times t \times s}$$

Where:
- d = distance of lamp to subject
- f = aperture setting
- L_r = Lumen Seconds value at selected point off reflector axis
- t = time of exposure*
- s = A.S.A. Exposure Index or Speed
- .005 = constant derived from average values of subject reflectance, environment, transmission of lens, effect of finite object distance, cos.^{4} effect, and vignetting by lens barrel.

Substituting: $df = \sqrt{.005 \times 275{,}000 \times 1 \times 10}$
Guide No. or $df = 117$

*For Press 25 use:
100% or 1. for open to 1/50th sec.
60% or .6 for 1/100th sec.
35% or .35 for 1/200th sec.
18% or .18 for 1/400th sec.

For Press 40 use:
100% or 1. for open to 1/50th sec.
60% or .6 for 1/100th sec.
35% or .35 for 1/200th sec.
18% or .18 for 1/400th sec.

For Superflash No. 2 use:
100% or 1. for open to 1/50th sec.
60% or .6 for 1/100th sec.
35% or .35 for 1/200th sec.
18% or .18 for 1/400th sec.

For Superflash No. 3 use:
100% or 1 for open to 1/25th sec.
55% or .55 for 1/50th sec.
25% or .25 for 1/100th sec.

To further demonstrate the practice of utilizing a single light source to cover more than one object at a different depth with identical exposures, assume that the object just formulated at the center of reflector axis is at 20 feet. This selection of distance automatically sets the aperture to 117/20 or approximately f/5.8. Assuming that the added object is at 10 feet or ½ the distance and since light is proportional to the square of the distance, only ¼ the light will be required. Selecting the points at which there is ¼th the light of the center of the axis (1st object) we find that the second object must be placed at approximately 50° off center of the beam to permit proper exposure. Therefore in setting up lighting equipment for the problem at hand use must be made of the reflector light distribution characteristics. Place reflectors in each of the upper corners to the rear of the camera and criss-cross them slightly downward toward the subjects at opposite sides making use of the light distribution curve for fairly even exposure of all the subjects.

It must be remembered that doubling the light by the use of two units pointed in the same direction will only increase the guide number by approximately one-fourth. Also it will be necessary to make use of narrow beam or "spot" lights to illuminate evenly the long center corridor. Fill-in lights located at spots at the far end of the car where they can be hidden have to be considered and formulated in a similar manner as is the aforementioned computations. In such cases other types of lamps with reduced light output may have to be considered for, of course, the exposure is determined by the lamp to subject distance.

For reference, data is included herewith for the Press 25, Press 40, No. 2 and No. 3 Superflash lamps. Integrated light output values for each of these lamps is included on their respective charts for the various shutter speeds commonly used. For the blue lamps, 25B, 40B, 2B and 3B the light output values are 40%, 47%, 45% and 45% respectively of the values given for the clear lamps.

HOLLYWOOD PHOTOGRAPHERS COMMENT ON THE RAILROAD CAR LIGHTING PROBLEM

HERBERT MEYER*

A RATHER FREQUENT task which the cameraman faces in filming Hollywood motion picture productions is that of photographing a scene which takes place in a railroad car, a bus, or an equally confined setting, where difficulties and restrictions in lighting test his ingenuity and technical knowledge. It, therefore, seemed of interest to obtain his viewpoint in respect to the problem that was submitted to *Photographic Science and Technique*.

Two conditions were found to prevail, however, which made it somewhat difficult for the men we interviewed to undertake a concrete treatment of the problem. One is the typical approach of the cameraman to such an objective. His principal task is always to center his photographic efforts on the action. As far as his sets are concerned, he is allowed to make considerable compromises, since often all that is really required is the establishment of an action background or location which shows sufficient recognizable detail to be accepted by the moviegoer as convincing. The other point is that the Hollywood cameraman, facing very unusual photographic problems with practically every new set, often has no other choice than to approach a project unprepared, and trust that ways and means will be found on the spot to meet its lighting problems.

Nevertheless, suggestions and ideas have been contributed by a number of well-known authorities in this field based on their experienced technical background and analysis of the problem.

Pictorial Project Analysis:

Each individual contacted in his approach to this assignment, insisted upon the necessity of first analyzing the psychological effects that are expected to be conveyed photographically. This type of thinking is without doubt typical of the manner in which the professional motion picture photographer confronts a given project, being always aware that his principal aim is to interpret a story detail by means of photography.

It appears, however, on second thought, that this approach may be a truly vital step in a thorough analysis of any photographic assignment. A clear understanding of the desired psychological effect determines to a large extent the photographic technique to be used.

In our specific case, it has been assumed that the project to be photographed had a message that the manufacturer of the railroad car wishes to convey to some potential user of his products or facilities. This message might emphasize, for instance, travel comfort, luxury, living room atmosphere and safety. A possible secondary postulation, however by no means unimportant, is that of avoiding evidence of artificial staging. Interpreting and communicating one or all of these ideas through a pictorial reproduction is well within the scope of thoughtful, modern photography of high technical standard.

The principal tool of the expert photographer, that in its versatility permits fairly unlimited effects, is lighting. This is important, whether one is concerned with black-and-white or color photography. A thorough knowledge of the difference or the relationship between visual brightness sensations and brightness renditions through camera, light-sensitive material and processing, is therefore essential. A careful study of the surface properties of materials, such as texture and gloss, can contribute immeasurably to the successful achievement of a desired photographic effect. All these are brightness characteristics. It is well to recall that the principal sensation attributes of color are hue, saturation and *brightness*. Most materials have surface properties which, independent of color hue, are visually experienced by us as typically exclusive and which, in many instances, convey a pronounced emotional sensation. The surface properties of rich oak, chromium metal, heavy textiles or plastics are singular qualities that stimulate in the observer sensations of warmth or coolness, comfort, elegance, strength, softness, and others.

Considering the railway car problem, the photographer is faced with a multitude of objectives to be, if possible, combined and convincingly reproduced in one photograph. This can be done through carefully balanced lighting with visual contrast varied intentionally over the total object space and successfully supported by proper placement of persons in character grouping. Within the confinement of a railway dining car or lounge car, groups of people can be selected and arranged, representing elegance, or homespun relaxation, or emphasizing safety and comfort. The lighting can be kept in harmony with these intended effects, creating more or less accentuated contrasts and reflections, and different brightness levels.

The technical execution of this task can hardly be discussed in great detail, except in connection with an actual experience with a typical assignment. Any veteran cameraman will find or invent numerous ways, tricks and gadgets to reach his goal, which, however, come to his mind only at the very time he actually arranges his lighting and prepares for the photographic exposure.

There are, however, a few fundamental suggestions that have been contributed to this analysis which may be helpful as applied to the generalized problem of lighting and photographing a confined object area.

Split Screen Method:

This method by which, through proper application of suitable masks, a negative is obtained in a double exposure,

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was suggested by a number of Hollywood cameramen as preferable to other techniques. It facilitates the placement of lamps or flash bulbs over the entire area of the car, and offers the simplest way of meeting the need for back and side lighting. The masking technique is not particularly difficult. The masking line would most properly split the object or image field vertically, which allows arrangement of light sources at any height from floor to ceiling throughout the area shielded by the half mask. It also facilitates the use of light sources located outside the car, projecting their radiation through the windows to the opposite side of the car. To avoid the occurrence of a visible masking line on the negative, it is of course necessary to either know certain fundamental requirements, or acquire this knowledge by experimentation. Placing the masks in contact with the film, or in proximity to the focal plane, is one way of doing it. However, this requires extreme care in mask alignment and especially close-fitting edges.

The method most frequently used in Hollywood is much simpler and safer as far as avoidance of matte line disturbance is concerned. It consists of positioning the masks in front of the camera by means of a matte box. The matte box is a cone or bellows-like device mounted over the front lens, similar to a lens shade. The masks can be inserted at the outermost, wider end of the box and adjusted to join each other in any wanted position—slantwise, sideways, or up-and-down. The distance of the mattes or masks from the front lens can be varied through bellows extension or shortening. The final position of the masks is determined and checked through observation of their edge images on the camera ground glass. The masks, in this arrangement, are purposely placed out of focus, which results in unsharp (so-called soft) edges. The wider the extension of the unsharp zone formed by the two masks, the softer the matte line reproduced on the negative will be, which is exactly what is desirable.

Single Source Lighting:

A surprisingly simple and effective technique of lighting space-confined projects is frequently employed in Hollywood production when the use of multiple light units is prohibitive for any reason. The principle of this technique is equally applicable to flash bulb still photography. A single lamp or flash bulb is mounted in a reflector having adjustable curvature. This lighting unit is placed in a central position directly below or above the camera, and focused at the far end center of the object area. The reflector curvature can be manipulated to produce an angular light fall-off, which results in a sometimes incredibly even balance of light intensity levels between foreground, background, sides and center. This is not surprising if one realizes that the effects of the inverse square law, the angular flux distribution as modified by the reflector curvature, and the requirement of higher illumination for close subjects due to cosine functions, all can tie in together to work in favor of a desirable over-all light balance. A technique of this type could at least serve to establish a general key light level for the railway car project.

Conventional Multiple Lighting:

This technique cannot be discussed in detail because the individual placement of flash bulb reflector units throughout the object area is, to a very large degree, dependent upon considerations and ideas perceived by the photographer while actually viewing every object of the specific railway car. Most any part of the set, including the people seated therein, can serve to hide or shield light sources or unwanted reflections.

A rather general suggestion was advanced by most of our Hollywood authorities to the effect that a larger number of small lighting units is decidedly preferable to a lesser number of large units. Problems of circuit resistance and its influence on synchronization therefore have to be carefully considered.

If lighting from outside the car through the windows is permissible, it would of course considerably simplify the problem of light balance and sufficiency of illumination. This light preferably should be softened by proper diffusion.

Application of large area diffuse type reflector panels placed in back of the camera or alongside may be found helpful to obtain needed fill-light. Such reflectors are made in the Hollywood studio shops by simply surfacing plywood panels with silver foil.

Intermittent Lighting:

Some Hollywood still photographers have acquired, with small flash bulb units, remarkable pictorial records photographing large, narrow hotel lobbies, etc., by progressively lighting and exposing a single film in consecutive sections. This technique, employing very small apertures and a single 500-1000 watt Mazda lamp, has been practiced by many commercial photographers in the past. The application to flash bulb exposure and the inclusion of people in such a project demands a substantial amount of experience and knowledge, gained only from practical experimentation.

Lighting Calculations:

It may be advisable to first plant incandescent light sources in the reflectors in place of flash bulbs and to determine with an incident light meter by various check readings the approximate lighting level and balance to be expected. The results of such readings have, of course, to be carefully modified with factors relating the characteristics of the incandescent sources to those of flash bulbs. Conversion tables suitable for this purpose are conveniently reprinted in the illumination section of H. M. Lester's "Photo-Lab-Index."

Where multiple flash lighting is chosen, the use of guide numbers presents few difficulties. In cases where a single light source illuminates people or objects which are located an appreciable maximum distance apart, the value for the mean distance seems to be indicated.

Miscellaneous:

Due to the problem of space confinement, the use of a wide angle objective will be necessary. This also provides maximum depth of field. It is suggested, however, that a lens be chosen of an angle not larger than is required for proper space accommodation. It is much better, in considering perspective, to take care of depth of field requirements through the use of sufficiently small lens apertures. Here also, knowledge of the practicability of latensification, which is widely employed in Hollywood, may be helpful where lighting conditions are insufficient to permit smaller

apertures using shutter speeds that are practicable. Gloss and specular reflections are commonly eliminated or toned down by application of wax or other flatting agents. However, as mentioned above, reflections to a certain extent are needed to portray the type of materials used in constructing the car interior.

Acknowledgment:

Appreciation is expressed to all those in the motion picture industry who have contributed their time and thoughts to the discussion of this photographic problem. Particular thanks are due:

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Karl Struss, A.S.C., S.M.P.E., P.P.A.

Lynwood G. Dunn, S.M.P.E., RKO-Radio Pictures, Inc.

Edward T. Estabrook, Universal Pictures Company, Inc.

Petro Vlahos, Motion Picture Research Council, Inc.

FILAMENT LAMP "STANDIN" FOR FLASH LAMPS

RICHARD BLOUNT*

The lighting approach that Mr. Ackerman proposes might be implemented by the use of one size of continuous burning filament lamps as "standins" for the initial lighting arrangements. Once set up, one size of photoflash lamp may be substituted to make the exposure. Such procedure requires that the photographer test his equipment in advance in the studio so that he can determine the photoflash exposure from an exposure meter reading of the initial lamp setup.

Filament lamps chosen as "standins" should ideally be the same size and shape as their photoflash counterparts so as to provide the same beam spread; they should also provide sufficient light to give reliable meter readings. High efficiency lamps are needed to satisfy this latter requirement and since the burning time of the longest setup probably will seldom exceed 30 minutes, the resultant short life is not a serious drawback. Lamps that most nearly fulfill these requirements are the various white-coated types designed for enlarger service. Enlarger lamps, such as the #211, #212, and #213, are particularly well adapted as substitutes for the PH/22, 31 or 50 photoflash lamps. While the flash bulb dimensions differ slightly from those of the photoenlarger lamps, the resultant beam spreads will not vary appreciably. The S-11 bulb enlarger lamps, such as the #111 and #113, provide only a limited substitute for the PH/5, SM or #6 photoflash lamps, because, unlike the larger enlarger lamps, the small lamps should not be operated with the base above the horizontal. Unfortunately, many lighting arrangements require this mode of operation.

The most convenient method for determining the ratio of exposure between given photoflash and photoenlarger lamps requires only materials available in every studio. Set up a single reflector of the type to be used at any convenient distance from a relatively blank wall. If desired, indicating tabs can be temporarily mounted and spaced along the wall at equal intervals at the same height from the floor as the reflector under test. These tabs will aid in determining the relative spread of the reflector with the two types of lamps. Then, with a camera placed so as to include all of the illuminated wall, a series of test photographs should be made with each lamp type. Exposures for the photoflash should be determined by referirng to the published guide numbers, using the recommended f/stop as well as two or three stops either side of the recommended value. Exposure meter or light meter readings should be used in the case of the enlarger lamps. Negatives of equal density should be compared. If a densitometer is available, very accurate comparisons can be made, otherwise, visual inspection will suffice. From the exposure records of two comparable negatives it is possible to determine the exposure ratio. For example:—

Photoenlarger Lamp Negative f/5.6 at 1 second

Photoflash Negative f/22 at 1/200 second

$$\text{Ratio} = \frac{5.6^2}{22^2} \times \frac{1}{1/200} = \frac{6000}{484} = 12.5$$

In other words, for the example given, the exposure meter reading for the "standin" lamps should be reduced by a factor of 12.5 to get the proper exposure for the particular photoflash lamp. Following this procedure, factors can be determined for a number of lamp combinations. For quick reference a list of these factors may be typed and glued to the outside of each reflector.

This system of substitution will work so long as the same size photoflash lamp is used in every reflector. To get properly balanced lighting, it is best to reduce excess light by the use of screens, diffusers, etc. Do not attempt to mix several sizes of lamps with this method.

*Lamp Department, General Electric Company, Nela Park, Cleveland, Ohio.

COLOR TECHNIQUE *for* PROFESSIONALS

The next issue of *Photographic Science and Technique* brings helpful data for color photographers who process their own transparencies and prints. It should also interest commercial color film laboratory technicians. The department *Technique for Professionals* will describe the tripling of effective film speed by controlled development and tell how to compensate for underexposed or overexposed Ansco Color Film by variations in the processing technique. In addition there will be the story of rapid processing of Printon worked out by the Ansco Research Laboratories for the U. S. Air Forces, a feature of the Technical Division program at the Baltimore convention.

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Silver-Image Development by Derivatives of p-Phenylenediamine†

T. H. JAMES

SUMMARY

The dependence of rate of silver-image development upon pH was determined for 4-aminodiethylaniline, 4-aminodiethyl-*m*-toluidine, 1-(4-amino-*m*-tolyl)piperidine, sym-dimethyl-*p*-phenylenediamine, and 4-amino-N,N-diethyl-3-dimethylaminoaniline. The rates of development increased with increasing pH. The rates of development by the first three agents increased with increasing concentrations of sodium sulfite or the coupler, sodium 1-naphthol-5-sulfonate. For a given concentration of coupler or sulfite, the relative increase in rate decreased with increasing pH. The coupler had no effect upon the last two agents, and sulfite was without effect upon the last. No induction period was observed in development by 1-(4-amino-*m*-tolyl)piperidine at pH 10 or 11 in the absence of coupler or sulfite, but a marked induction period was observed in the presence of either agent. Oxidation of the developing agent by ferricyanide during the development process accelerated development, suggesting that some reaction intermediate was responsible for the induction period in the development. Oxidation products of 4-aminodiethyl-*m*-toluidine retard development at pH of 11 or lower.

SOME of the derivatives of *p*-phenylenediamine hold a place of high importance among the photographic developers because of their use in color photography. So far, however, no detailed investigation of the dependence of the kinetics of development by such compounds upon the structure of the developing agent and the composition of the developing solution has been reported in the literature. As part of a general study of the photographic properties of a series of derivatives of *p*-phenylenediamine carried out in the Kodak Research Laboratories,[1] data have been obtained on the rates of silver-image development by 62 compounds used under various conditions of pH and solution composition. A few of these compounds were selected for more detailed study. The present paper will be concerned chiefly with this phase of the investigation. Results obtained in the more restricted study of the remaining compounds will be treated in a subsequent paper.

Experimental Materials and Method

The photographic material used in the present investigation was a high-contrast motion picture positive film of relatively simple composition and small dispersion of grain size. A photomicrograph of the undeveloped grains of this material was published previously.[2] Exposures were made on the Eastman IIb Sensitometer. Development was carried out at 20 C. in an apparatus previously described.[3] Solutions were prepared from deaerated components in an atmosphere of nitrogen, and agitation during development was supplied by a stream of nitrogen passing through the solution and over the surface of the film. The developing agents were obtained from A. Weissberger, J. Thirtle, and R. Bent, of these Laboratories. The methods of preparation and purification are described elsewhere.[1]

Two methods were used to determine the rate of development. In the first, the densities obtained for a fixed exposure (the data in this paper are, unless otherwise specified, for log $E = 1.75$) were plotted against the time of development. The rate was taken as the reciprocal of the time required to yield a density of 0.20 above fog. In the second method, the development process was treated as a first-order reaction and the value of k in the equation,

$$dD/dt = k(D_{max} - D),$$

was determined. This could be done most readily by plotting values for log $(D_{max} - D)$ against the time of development and determining the slope of the straight line obtained, this slope being the desired value, k. With some of the developing agents used, this plot yielded a straight line over a considerable portion of the reaction, under all development conditions tried, and the straight line passed through the point corresponding to log D_{max} for $t = 0$. A few developing agents showed an "induction period" under some conditions. In this induction-period region,

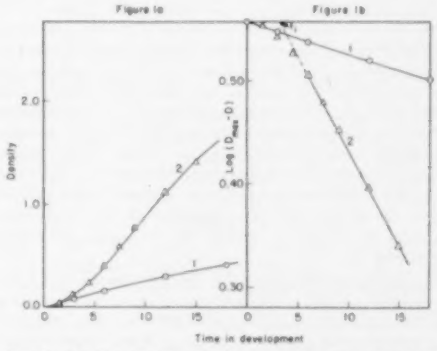

Fig. 1. (a) Density-time of development curves for 1-(4-amino-*m*-tolyl)piperidine at pH 10.82. Curve 1, no addition; Curve 2, in the presence of 1 mole of sodium 1-naphthol-5-sulfonate per mole of developing agent. (b). "First-order" plots of same data.

†Communication No. 1357 from the Kodak Research Laboratories. Received August 2, 1950.

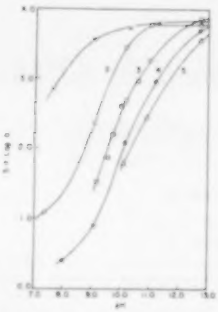

Fig. 2. Dependence of rate on pH. Curve 1, 4-amino-N,N-diethyl-3-dimethylaminoaniline; Curve 2, sym-dimethyl-p-phenylenediamine; Curve 3, 4-aminodiethyl-m-toluidine; Curve 4 4-aminodiethylaniline; Curve 5, 1-(4-amino-m-tolyl)piperidine.

the slope of the log $(D_{max} - D)$ —time plot increased with increasing time of development.

The two cases are illustrated in Figure 1 for the developing agent 1-(4-amino-*m*-tolyl)piperidine. The left-hand side of the figure gives the density—time of development curve for the developing agent alone at pH 10.86 (curve 1) and for the developing agent in the presence of sodium 1-naphthol-5-sulfonate at pH 10.82 (curve 2). The right-hand side of the figure gives the corresponding plots of the log $(D_{max} - D)$ values. No induction period is found when the developing agent is used by itself. However, in the presence of the sodium 1-naphthol-5-sulfonate, which acts as a color coupler, a definite induction period appears.

A quantitative measure of the induction period was arrived at as follows: The straight-line portion of the log $(D_{max} - D)$ plot is extrapolated to the point corresponding to log D_{max}. The time value at this point, t_i, is determined. The value, t_i, multiplied by k gives a relative value of the induction period in comparison with the rate of development beyond the induction period and this value, multiplied by a factor of 10 for convenience, will be termed the "induction coefficient."

$$\text{I. C.} = 10 \times t_i \times k.$$

On this basis, the developing agent alone shows an induction coefficient of zero, whereas the developing agent, in the presence of the coupler, shows an induction coefficient of 0.59.

pH Dependence for Developing Agent Alone

The dependence of the rate of silver-image development upon the pH of the solution was determined for the following five agents: 4-aminodiethylaniline, 4-aminodiethyl-*m*-toluidine, sym-dimethyl-*p*-phenylenediamine, 4-amino-N,N-diethyl-3-dimethylaminoaniline, and 1-(4-amino-*m*-tolyl)piperidine. All solutions were 0.0025 *M* in developing agent, 0.0033 *M* in potassium bromide, and buffered to give the desired pH. The variation of rate with pH is illustrated in Figure 2, where log k values are plotted against pH.

The shapes of the curves for the five developing agents are strikingly similar, and the curves give the impression of being merely shifted along the pH axis. The maximum slope is somewhat greater than unity. These curves show a quite different behavior from the corresponding curves for the oxygen oxidation of various derivatives of p-phenylenediamine obtained by LuValle, Glass, and Weissberger.[4] For example, the rate of oxygen oxidation of sym-dimethyl-*p*-phenylenediamine increases with increasing pH in the lower pH region, passes through a maximum at a pH between 8 and 9, drops to a minimum at pH 10, and subsequently increases with increasing pH. The maximum slope of the log k-*vs.*-pH curve was about 0.3.

Effect of Coupler and Sulfite on Development Rate

It was shown in a previous paper[3] that sodium sulfite and sodium 1-naphthol-5-sulfonate increase the rate of development by 4-aminodiethyl-*m*-toluidine at pH 8.5. In the present investigation, a similar increase was noted with many of the developing agents employed, and at various pH values. The most extensive investigation with any one developing agent was carried out with 4-aminodiethylaniline, where several coupler concentrations were employed and the pH range of 8 - 12.7 was studied. The developing solution had the same composition as before, and data were obtained for solutions containing 1/4, 1, 4, and 16 moles of the coupler, sodium 1-naphthol-5-sulfonate, per mole of developing agent. The sulfonated coupler was employed to give a soluble dye which would be readily removed from the site of development and would not interfere with subsequent determinations of the silver image density.

Figure 3 illustrates the data obtained. The logarithm of the rate constant is plotted against pH for the various coupler concentrations. For any given pH, the rate of development increases with increasing coupler concentration, but the largest relative effect is produced at a pH of about 9, and the effectiveness decreases with increasing pH beyond this value. At the highest pH value employed (12.7), the coupler exerts relatively little effect upon the reaction rate.

Table I

EFFECT OF SODIUM SULFITE ON THE RATE OF DEVELOPMENT BY 4-AMINODIETHYLANILINE

pH	Na_2SO_3 (moles per mole developer)	Coupler	k
10.11	——	——	0.0012
10.12	1.0	——	.0066
10.11	4.0	——	.0113
10.08	16.0	——	.0158
9.94	64.0	——	.0158
9.86	16.0	0.25	.0172
9.86	——	.25	.0066
9.97	16.0	4.00	.024
10.00	——	4.00	.0235

A few tests were made with a second coupler, 1-*p*-sulfophenyl-3-methyl-5-pyrazolone, at various pH values. This

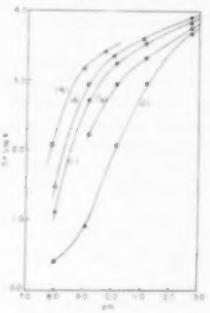

Fig. 3. Effect of sodium 1-naphthol-5-sulfonate on the rate of development by 4-aminodiethylaniline. Figures on the curves give the moles of coupler per mole of developing agent.

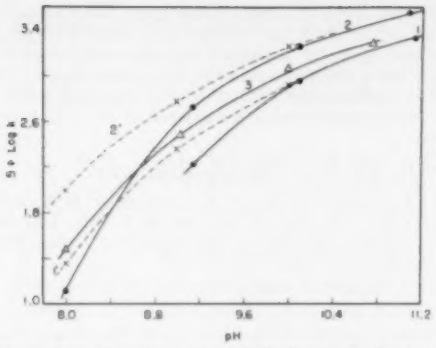

Fig. 4. Effect of couplers on rate of development by 4-aminodiethylaniline. Curve 1, ¼ mole sodium 1-naphthol-5-sulfonate; Curve 1', ¼ mole of the ionized coupler; Curve 2, 1 mole of the coupler; Curve 2', 1 mole of the ionized coupler; Curve 3, 1 mole of 1-p-sulfophenyl-3-methyl-5-pyrazolone.

coupler was less effective than the 1-naphthol-5-sulfonate at high pH values, but was more effective in equimolar amounts at pH 8.0. This is illustrated in Figure 4. Curve 3, representing the pyrazolone coupler, crosses curve 2, representing 1 mole of the naphthol coupler, at pH 8.5. If, however, curves are drawn for equal concentrations of

Table II

EFFECT OF SODIUM SULFITE ON RATE OF DEVELOPMENT BY 4-AMINODIETHYL-M-TOLUIDINE

pH	Na_2SO_3 (moles per mole developer)	k	I. C.
10.08	0	0.0033	0
10.06	¼	.0078	0
10.08	1	.0143	0
10.07	4	.022	0
10.99	0	.0165	0
10.99	¼	.022	0
10.98	1	.031	0
10.98	4	.038	0

the *ionized* couplers, the curves for the pyrazolone and naphthol no longer cross but run approximately parallel to each other. Curve 3 remains substantially unchanged, since the major portion of this coupler is ionized even at pH 8.0. The pK value for the ionization of the hydroxyl group of the naphthol coupler is 9.00, so that a substantial change appears in the shape of the curves for this coupler for pH values below 10. The curves representing ¼ and 1 mole of *ion* are represented in the figure by the broken lines, and are numbered "1'" and "2'."

Sodium sulfite accelerates development in much the same way as the couplers, but to a smaller extent. Table I gives some rate values for development by 4-aminodiethylaniline in the presence of varying amounts of sulfite at pH of about 10. Some values are also given for a combination of sulfite and sodium 1-naphthol-5-sulfonate. Over the pH range 8-10, the rates obtained in the presence of 13.3 moles of sulfite without coupler were almost identical with those obtained in the presence of one mole of the ionized 1-naphthol-5-sulfonate. At higher pH values, the sulfite was less

Table III

EFFECT OF COUPLER ON RATE OF DEVELOPMENT BY 1-(4-AMINO-M-TOLYL)PIPERIDINE

pH	k (no addition)	k (coupler added)	Ratio
10.05	0.0006	0.0079	13.2
11.00	.0038	.020	5.2
12.7	.036	.051	1.4

effective than the coupler. When sulfite and coupler were used together, the sulfite produced a significant increase in development rate when only 0.25 mole of coupler was present, but was practically without effect when 4.0 moles of coupler were present.

No induction period was observed with 4-aminodiethylaniline at pH 8 or 9 under any conditions. At pH 10, I.C. was zero in the absence of coupler or in the presence of ¼ mole; in the presence of 1, 4, and 16 moles, I.C. was 0.03, 0.05, and 0.11, respectively. At pH 11, I.C. for 0, ¼, ½, 1, and 4 moles of coupler was 0, 0, 0.04, 0.15, and 0.14, respectively. At pH 12.7, I.C. for 0, ¼, 1, and 4 moles of coupler was 0.025, 0.06, 0.11, and 0.23, respectively.

Development by 4-aminodiethyl-*m*-toluidine is accelerated by both coupler and sulfite in much the same manner as development by 4-aminodiethylaniline. Data on the effect of sulfite are given in Table II for two pH values.

Both sulfite and coupler accelerate development by 1-(4-amino-*m*-tolyl)piperidine, and the relative acceleration decreases with increasing pH. This effect is illustrated by the data in Table III for development in the absence of coupler and in the presence of 1 mole of sodium 1-naphthol-5-sulfonate per mole of developing agent.

The coupler was without effect upon the rate of development by sym-dimethyl-*p*-phenylenediamine at any pH. Addition of 13.3 moles of sulfite per mole of developing agent increased the rate of development 14.5-fold at pH 9, 1.9-fold at pH 10.0, and was without effect at pH 11 and 12.7. Neither coupler nor sulfite altered the rate of development by 4-amino-N,N-diethyl-3-dimethylaniline at any pH tested.

Mechanism of Sulfite and Coupler Acceleration

The accelerating action which sodium sulfite and the couplers exert upon development by certain derivatives of *p*-phenylenediamine can be explained in part by a removal of retarding oxidation products formed during development. At the lower pH values, the inhibiting effect of oxidation products can be readily demonstrated. For example, addition of 0.0002 *M* potassium ferricyanide to a developer consisting of 0.0025 *M* 4-aminodiethyl-*m*-toluidine and 0.0033 M potassium bromide buffered at pH 9.0 completely destroyed the developer activity of the solution, although it

Table IV

EFFECT OF ADDITION OF POTASSIUM FERRICYANIDE, FOLLOWED BY SODIUM SULFITE, ON THE ACTIVITY OF 4-AMINODIETHYL-M-TOLUIDINE AT pH 9.0.

Ferricyanide Concentration	k (after addition of sulfite)	Color of Solution (after addition of sulfite)
———	0.0094	colorless
0.0002	.0094	light blue
.0010	.0080	light blue
.0025	.0058	light blue
.0050	.0017	light brown

pink color produced by the oxidizing agent, leaving a light oxidized only one-twenty-fifth of the developing agent. Addition of 0.01 *M* sodium sulfite discharged the deep blue solution which had the same activity as a fresh solution containing the same amount of sulfite but without addition of the ferricyanide. If larger amounts of ferricyanide were added before the sulfite, the latter only partially restored the activity of the solution, as shown by the data in Table IV. However, the activity of a one-half oxidized solution to which sulfite had been added corresponded reasonably well with that of an unoxidized solution containing just half of this initial amount of developing agent.

At pH 11.0, addition of 0.0002 *M* potassium ferricyanide to the 4-aminodiethyl-*m*-toluidine developer decreased the rate constant from 0.0170 to 0.0112. Addition of sulfite completely restored the activity, the constants for the oxidized and unoxidized solutions being 0.035. At pH 12.7, the ferricyanide had no influence upon the rate of development.

Removal of the oxidation product of the developer by reaction with sulfite or coupler cannot explain completely the effect of these agents on development by 1-(4-amino-*m*-tolyl)piperidine and several other derivatives of *p*-phenylenediamine which show similar properties. These developing agents do not show an induction period over at least part of the pH range in the absence of sulfite and coupler, but show a marked induction period in the presence of either one. A possible cause of the induction period is that some reaction product is formed between oxidized developer and coupler or sulfite which accelerates development. This explanation is supported by the following experiment: A solution of 0.0025 *M* 1-(4-amino-*m*-tolyl)-piperidine and 0.04 *M* sodium 1-naphthol-5-sulfonate was prepared at pH 10.0. One set of sensitometer strips was developed in the solution for 4 and 8 minutes. A second set was introduced into the solution, removed after 30 seconds, and immersed for 10 seconds in a solution of 0.050 g of potassium ferricyanide in 400 cc of water, then returned to the developer. This procedure was repeated twice more, and the strips were transferred to the fixing bath at 4 and 8 minutes, as before. Thus, the strips of the second set had been in the developing solution proper for only $3\frac{1}{2}$ and $7\frac{1}{2}$ minutes, but the densities of the developed images were greater than those of the first set by 25-50 per cent. A similar result was obtained when the coupler was replaced by sulfite.

Little is known of the mechanism of reaction between either sulfite or coupler and the oxidized developing agent. Accordingly, any scheme which is proposed at the present time to account for the auto-acceleration effect is purely speculative. The following reaction scheme is offered in this spirit to account for the auto-accelerating effect of sulfite:

$$R + Ag^{+} \rightarrow S + Ag \quad \text{(slow)}. \qquad (1)$$

$$S + Ag^{+} \rightarrow T + Ag \quad \text{(fast)}. \qquad (2)$$

$$T + SO_3^{--} \rightarrow (T \ldots SO_3^{--}). \qquad (3)$$

$$(T \ldots SO_3^{--}) + R \rightarrow (S \ldots SO_3^{--}) + S. \qquad (4)$$

$$(S \ldots SO_3^{--}) \rightarrow \text{monosulfonate}. \qquad (5)$$

In these equations, R, S, and T represent the developing agent, its semiquinone, and its fully oxidized form, respectively; and $(T \ldots SO_3^{--})$ and $(S \ldots SO_3^{--})$ represent complexes of the T and S forms with sulfite. This scheme is based upon the asumption that the semiquinone is a more active developer than the fully reduced form. The fourth equation provides a means for the regeneration of the active semiquinone at the expense of the fully reduced form.

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2. T. H. James, *J. Franklin Inst.* Vol. 240, P. 89 (1945).
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4. J. E. LuValle, D. B. Glass, and A. Weissberger, *J. Am. Chem. Soc.* Vol. 70, P. 2223 (1948).

PSA JOURNAL AWARD COMMITTEE RULES AND PROCEDURE

The PSA Technical Division Journal Award Committee shall consist of five members in good standing. This committee shall be appointed by the Chairman of the PSA Technical Division and confirmed by the Executive Committee of the Division.

The PSA Technical Division Journal Award shall be made on the basis of the following qualifications:

1. **The paper shall have been published originally in the PSA JOURNAL, its Sections or Supplements, during the preceding calendar year.**
2. **The paper must deal with some scientific or technical aspect of the field of photography.**
3. **In judging the merits of the paper, three qualities shall be considered as follows:**
   a. **Technical merit and importance of material** 45%
   b. **Originality and breadth of interest** 35%
   c. **Excellence of presentation of the material** 20%

The majority vote of the entire Committee shall be required for the election of the Award. Absent members may vote in writing.

The report of the Committee shall be presented to the Executive Committee of the Technical Division in the late summer meeting for ratification. At the national meeting of the PSA in the fall, a suitably embellished certificate shall be presented to the author or to each of the authors of the most outstanding paper.

Other papers may be cited for Honorable Mention at the option of the committee, but in any case should not exceed three in number.

These regulations, a list of all Journal Award recipients, the year of each Award, and the title of the papers shall be published at least annually in PSA JOURNAL. In addition, the list of papers selected for Honorable Mention shall be published in PSA JOURNAL during the year current with the Award.

JOHN CRABTREE WINS FIRST TECHNICAL PAPER "JOURNAL AWARD"

H. CLYDE CARLTON, APSA

MR. JOHN I. CRABTREE, FPSA, of Rochester, New York, has the distinction of being the first recipient of the Technical Division's Journal Award for the outstanding technical or scientific paper published during 1949 in PSA JOURNAL.

An illuminated scroll, testifying to the merits of his paper on "Rapid Processing of Films and Papers," was presented to Mr. Crabtree by the writer at the PSA national convention banquet in Baltimore on October 21. His illustrated paper appeared in the February 1949 PSA JOURNAL (Volume 15, No. 2).

The PSA Journal Award was inaugurated this year by action of the Technical Division's executive committee. Its purpose is to recognize "the most significant contributions published in PSA JOURNAL for the preceding year, in either the technical or scientific fields."

It has been stipulated that the Award shall be made on a calendar year basis and shall be given at the annual convention. Another requirement, that the papers must have been originally published by the PSA, narrowed the field of selection by excluding some papers that had been simultaneously published elsewhere.

The reviewing of 1949 JOURNAL papers by the Journal Award Committee has been in progress for some time. A consensus in favor of John Crabtree's paper was achieved, however, as soon as we had clarified the basis of evaluation by interpretation of the rules. Assisting me in this procedure have been the following:

Dr. Herman H. Duerr, Ansco, Binghamton, New York, from the Technical Division;

Glenn E. Matthews, Kodak Research Laboratories, Rochester, New York, from the Technical Division;

George Allen Young, Camera Craft Publishing Company, San Francisco, California, from the Color Division;

Frank E. Fenner, editor of "Popular Photography," Barrington, Illinois, from the Motion Picture Division.

The above committee was established and their procedures were set up in accordance with regulations adopted by the executive committee of the Technical Division on June 24, 1950.

Mr. Crabtree is assistant superintendent in charge of the department of photographic chemistry in the Kodak Research Laboratories. Since his employment by the Kodak Company as a research chemist in 1913, he has had a distinguished career in his chosen field.

He founded the department of photographic chemistry in 1913. From 1916 to 1938 John Crabtree headed the motion picture film developing department of the Laboratories and since 1916 has been head of the photographic chemistry department. In 1929 he was appointed assistant superintendent of the Kodak Research Laboratories in charge of the photographic chemistry department. That department is responsible for devising the methods of processing various films, plates, and papers for the company, excluding color photography and graphic arts.

The fields of research which Mr. Crabtree has supervised include: photographic developers; the fogging of photographic materials; the use of desensitizers; the chemistry of development and fixation; stains, spots and marks on films and papers; the corrosive effect of photographic solutions on photographic apparatus; lithography; flash powders; tinting and toning; lantern slides; tropical processing; silver recovery; and motion picture processing techniques.

Within recent years Mr. Crabtree and his colleagues have been concerned mainly with the devising of proprietary processing chemicals for the company. He has also served as chairman of Subcommittee 8 of Sectional Committee Z38 of the American Standards Association which developed more than sixty American Standards for photographic processing chemicals, methods and apparatus.

The PSA JOURNAL paper for which Mr. Crabtree received his Journal Award carries this preliminary summary:

"By the use of superhardened emulsions, it is possible to process films and papers satisfactorily within a few seconds, as compared to the usually recommended times of 5 to 10 minutes for negative materials, and 30 to 45 seconds for papers at the standard temperature of 68°F.

"Rapidity of action is accomplished by (a) use of elevated temperatures, namely 125° to 150°F. for the developer, fixer, and wash water, (b) optimum agitation by spray application of the solutions and wash water, and (c) drying by contact with a heated surface or by jets of hot air. Photographic quality is comparable to that obtained at 68°F.

"The rapid processing technique has been adopted for the production of records for television and for race timing. Its application to all branches of photography may ultimately be realized."

The Streamlined Swiss "Euram" Camera†

ANTOINE GAZDA*

A NUMBER OF "Dream Cameras" have appeared in recent years in sketch or model form. These have been inspired in many cases by wartime experiences with existing cameras. The designers, quite often unhampered by a mechanical engineering education, have produced a number of interesting ideas, some of which have been reduced to practice in working models. However, none of these "Dream Cameras" has yet been put on the market.

A number of American military people, camera manufacturers, and others have been interested recently in a "Dream Camera" imported from Switzerland. This is the "Euram" 35mm Gun camera which is remarkable, among other things, for its well engineered and genuinely streamlined design (Fig. 1). This camera combines the convenience of quick loading and quick interchange of film magazines with the acknowledged advantages of the 35mm professional film size.

The "Euram" camera takes motion pictures at the standard speed of 24 frames a second or makes single-frame exposures at predetermined intervals, with or without an operator in attendance. It was designed particularly for use on airplanes, boats or land vehicles. The DC shunt motor within the camera is operated by the standard 24 volt airplane power supply. The name "Euram" is the trade name of a Zurich corporation which chose that name because it is doing business both in Europe and in America.

As shown in the illustrations, the Euram camera is equipped for mounting on any one of four surfaces, depending on the support available on the aircraft or other vehicle. It has manifest military applications for bomb spotting, records of gunnery or of rocket attack or for monitoring events where no operator can be in attendance. Civilian applications of the Euram Camera are largely in the field of science and sports. The overall dimensions are approximately 5⅞ inches high, 5⅜ inches wide and 16¾ inches long. The heighth of the magazine tapers from 5⅞ inches to 5⅜ inches. The magazines are 11½ inches long and 2¾ inches thick.

The 35mm film magazines hold standard 112 foot lengths of film on standard 50mm motion picture cores. Magazines are instantly attached or detached from the camera body, this operation being coupled with a remarkable feature of the magazine, an automatic loop former. In Figure 2 the automatic loop former is shown in the erected position. As soon as the magazine seats in the camera body, the loop formers retract leaving free film loops before and after the picture aperture. A fool-proof arrangement makes it impossible to insert a magazine into the camera until the automatic loop former has been erected to provide loops of the proper length. The magazine has been designed without any velvet in the film openings in order to avoid scratches on the film. The gear-driven sprocket within the magazine and the clutch-driven take-up spool are instantly coupled with the driving motor when the magazine is inserted in the camera.

Lenses of four different focal lengths may be used interchangeably; each is covered by the front cap (Fig. 4) except the 125mm telephoto lens which is used with a special front cap through which it protrudes. The lenses, which are held in place by a conventional bayonet lock, have to be removed from the camera to adjust the focus but the diaphragm adjustment can be operated by merely removing the front cap. The accuracy of focus can be checked by inserting a focusing magnifier in place of the film magazine. The focusing magnifier is furnished as an accessory to the camera.

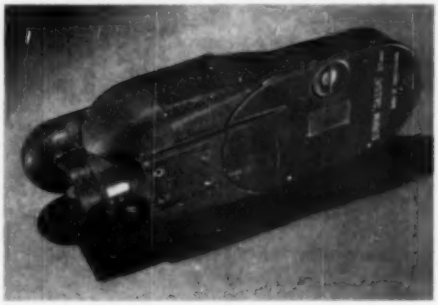


Fig. 1. The streamlined camera housing of the "Euram" 35mm Magazine Camera.

A spring-loaded pressure plate forms part of the film magazine. Figure 3 shows the easy accessibility of the front gate for cleaning or inspection. The claw movement is positive in action and alternates with a positioning pin to

†Received August 25, 1950.

*Gazda Engineering Company, Providence, Rhode Island.

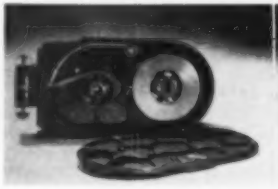


Fig. 2. Magazine interior showing film path and automatic loop former.

Fig. 3. "Euram" Camera interior showing tapered grooves in which magazines slide and electrical power and switch connections emerging from the tapered tail of the housing.

insure film steadiness at the time of exposure. The rotating shutter has an 160° aperture.

The smoothly contoured casing of the "Euram" Camera is made up of aluminum die-castings. The illustrations show a finished camera made from dies and tools, not a hand-made model. The weights of the camera and its components are as follows:

Camera housing	3.140 kg	6½ lb
Front cap	.175 kg	6 oz
Film magazine, empty	1.950 kg	4.3 lb
Objective lens 35mm f/2	0.095 kg	3 oz
Objective lens 50mm f/1.5	0.130 kg	4½ oz
Objective lens 85mm f/2	0.230 kg	½ lb
Telephoto lens 125mm f/2.3 (with cap)	0.685 kg	1½ lb
Total weight of camera ready for operation with 112 feet of film on plastic cores, 50mm lens	5.535 kg	12.2 lbs

It is believed that the "Euram" 35mm magazine camera will do anything that the GSAP 16mm gun cameras can do and out-perform them in a number of matters. The standard 35mm motion picture film provides pictures 6½ as large in area as 16mm frames with tremendous gain in resolution of detail when pictures are enlarged. Because commercial motion picture film is a professional product, slit and perforated with great accuracy, and particularly because four sprocket holes are provided for each frame instead of one sprocket hole in the case of amateur-type 16mm cine film, great precision of image registration is expected from the "Euram" camera.

Fig. 4. Front of the "Euram" Camera with cover removed to show lens and compact motor in parallel positions.

The European designers of this streamlined 35mm magazine camera have many years of experience in the design, construction, and operation of cameras and photographic equipment, particularly for the motion picture industry abroad. The object has been to design a camera for the most exacting performance requirements. It is believed that that purpose has been fulfilled in the "Euram" camera.

*Systematic Identification of Photographic Papers**

ANON†

SUMMARY

An evaluation system for photographic papers based on the characteristic curve is proposed which permits the definition of gradation and speed of positive emulsions on opaque supports numerically with sufficient accuracy for practical use. The designation of the emulsion is carried out by 3 numbers.

The 3 identification numbers are defined as follows:

(1) Speed as $1/E = 10{,}000/\text{num log } E_d = 0.8$
i.e. the value of log E for the point on the curve with the density 0.8.

(2) Gradation as the difference of certain values of log E:
(a) printing range $KU = (\log E_{d=2.2} - \log E_{d=0.08}) \times 10$
(b) slope $SI = (\log E_{d=1.2} - \log E_{d=0.2}) \times 10$

THE PHOTOGRAPHIC properties of a photographic paper that has been completely developed after suitable exposure are plainly described in the characteristic curve. However, a single curve contains no information about a property which is of great importance for the practical use of a photographic paper, that is, the exposure-development range. To analyze that, a series of curves would have to be prepared.

However, the useful range of an emulsion can be determined in a better way by a completely practical test—the preparation of picture series which are obtained by systematic variations of over- and under-exposures and corresponding developing times around the optimal exposure and developing conditions.

A sensitometric curve is a useful means of identification only for someone having sufficient experience to be able to read in the curves the essential properties of photographic emulsions. A curve is therefore not suitable for a rapid orientation of the ordinary practical user of photographic materials. Without a comparison curve the properties of unknown emulsions can be read from their curves only approximately unless detailed measurements are made. It is

*Translation by G. A. Wiesehahn from *Foto-Kino-Technik*, Vol. 4, No. 2, pp. 37-39, Feb. 1950. Received April 19, 1950.

†Compiled by Deutscher Normenausschuss on the basis of work by the Deutscher Lilienthalgesellschaft.

therefore necessary for the orientation of the technician to derive somehow from the characteristic curves of photographic emulsions the essential photographic data in numerical form, so that the user has a sufficiently detailed picture of the properties of the material and does not have to rely on the vague labels "hard," "normal," "soft" etc. This task is by no means simple.

Speed and gradation are the most important photographic properties in every photographic material and must be as clearly and completely defined as possible.

Though there is not as yet a generally recognized exposure technique for photographic papers, as there is for negative materials in the DIN or the other known sensitivity systems, the definition and identification of paper speed should be rather simple. It is only necessary to agree on a certain exposing apparatus which is as closely as possible adapted to the practical use of the photographic papers and to select a certain point on the characteristic curve as "sensitivity point." Both offer no special difficulties, at least theoretically.

A clear definition of "gradation" is more difficult. Of the numerous possibilities for the numerical definition of the gradation of a photographic paper only a few shall be mentioned as examples. The following characteristics —either by themselves or together with other data—are to be taken into consideration:

1. The printing range, i.e. the difference between the abscissa values of two definite density points on the curve (Fig. 1).
2. The maximum density (S_{max})* which, with correlated emulsions of a certain paper series, frequently is higher with steeper gradation.
3. The tangent value (γ) of the angle which the steepest possible tangent that can be put against the curve forms with the abscissa of the coordinate system.
4. The slope (expressed as angle value in degrees or as tg value) of the line connecting the points S_{min} and S_K (which limit the printing range).
5. The length and slope of the lines S_{min} to S_D and S_D to S_K, where S_D is the point at which the curve has the strongest curvature.
6. The ordinate value of S_D (measured on the vertical) together with the slope and length of the line S_D to S_K effective or measured on the ordinate.

The possibilities mentioned are only examples; they could be considerably increased in number.

From these discussions it is apparent that there is with certainty more than one way to obtain a brief, sufficiently informative definition of the most important photographic properties of a photographic paper. It may well be assumed that a classification system, which presumably would lead to a certain standardization of the photographic papers, would have been introduced long ago if the manufacturers of photographic papers would have been interested in it, which apparently is not the case.

On the other hand, there is unquestionably on the part of the users of photographic papers a need for a labeling of the photographic papers furnished by the industry which is as accurate and plain as possible. Therefore an attempt

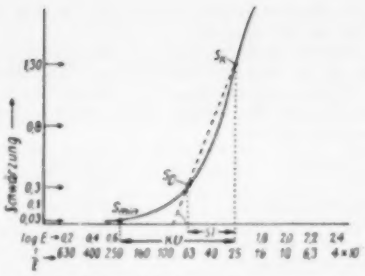


Fig. 1. Characteristic curve of a photographic paper with proposed classification criteria.*

* The symbols from the original German are translated as follows:

Schwärzung (S) = density (d)
S_{max} = maximum density (d max)
S_{min} = minimum density (d min)
S_D (Durchhangpunkt) = density point for greatest sag (curvature)
S_K (Kopierumfang) = density at printing range limit
KU (Kopierumfanges) = printing range

will be made in the following to develop a classification system serviceable to the user for the discrimination at first only of the most important properties of the photographic papers; that is speed and gradation. We omit giving a detailed scientific foundation of the proposed system in order to save space. Special attention has been paid to simplicity of the sensitometric procedure and to reproducibility of the values.

Proposed Evaluation System

The evaluation system is based on a subdivision of the characteristic curve into certain sections using definite density points on the curve. It avoids the introduction of difficult or not plainly reproducible constructions as criteria. For this reason data based on the constructions of tangents or similar lines are not used. Where angle values are used for the characterization of the gradation they are defined by the connecting lines of two curve points.

For the ordinary numerical classification of papers the following three data, which are defined in greater detail below, are proposed:

1. As speed number the abscissa value 1/E = 10,000/ num log E of the curve point corresponding to density 0.8.
2. For the definition of gradation:
   a) the value for the printing range (KU) measured on the abscissa as difference of the log E values of the density points 0.03 and 1.3 (or 1.55 for glossy papers),
   b) the value of the projection of the curve section or the line respectively between the density points 0.3 and 1.3 measured on the abscissa (the slope Sl.).

For a more exact definition of the gradation, besides the mentioned data, which ordinarily are sufficient, the characteristic curve can be divided into a number of sections defined by certain density points. This type of characteriza-

*Editor's Note. This and some of the following symbols have been shown as in the original publication to agree with the illustrations. For translations, look under Fig. 1.

Table I

SUGGESTED VALUES FOR CONTACT PRINTING PAPERS
Printing Range, Steepness, Sensitivity

Contact Paper (Class C)	Printing Range d 0.03 to 1.30	Slope d 0.03 to 1.30	Speed 1/E for d = 0.8
UH—range	< 3	< 1,6	
Median	2,3	1,1	0,6
EH—range	from 3,1 to 6,0	from 1,7 to 2,1	
Median	5,0	1,9	1,25
H—range	from 6,1 to 8,4	from 2,2 to 3,0	
Median	7,6	2,3	1,8
N—range	from 8,5 to 9,8	from 3,1 to 4,1	
Median	9,0	3,6	2,0
S—range	from 9,9 to 11,0	from 4,2 to 5,3	
Median	10,4	4,6	3,0
W—range	from 11,1 to 13,5	from 5,4 to 7,0	
Median	11,7	6,2	3,2
EW—range	> 13,6	> 7,1	
Median	15,4	7,6	2,9

Translation of Contrast Designations

UH = Ultra Hart	= Ultra Hard
EH = Extra Hart	= Extra Hard
H = Hart	= Hard
N = Normal	= Medium
S = Spezial	= Special
W = Weich	= Soft
EW = Extra Weich	= Extra Soft

tion will not be generally required but can be drawn upon in dubious cases, for example for the classification of a gradation, in place of the pictorial test.

Determination of the Data for the Numerical Definition of the Papers

The testing of the papers, i.e. the preparation of the test strip, is done with the aid of a gray step wedge with a step of 0.1 and about 25 to 30 fields on which the step numbers and the corresponding 1/E values are suitably inscribed. Such a gray step wedge therefore covers uniformly the densities which lie between d = 0.1 and d = 3.0.

The exposure of the sensitometer strips which serve for the preparation of the characteristic curves for the purpose of determining gradation could be carried out in any normal uniformly illuminated printing apparatus whose illumination intensity corresponds to that used in practice for the type of emulsion in question.

However, the exposure for the determination of speed must be carried out in a standardized apparatus with defined light source and shutter and adjustable to a constant value. An apparatus corresponding to the DIN apparatus for negative materials could be developed, for example, providing exposure times for the sensitometric test corresponding approximately to the normal exposure times for the practical use of the photographic papers. This means an increase in complication compared with the DIN apparatus for the testing of negative materials because papers are in use whose sensitivities lie apart by more than the factor 10^{12} (e.g. negative and reflex print papers which are both used for the same purpose). Because efforts will be made to maintain the light source as such constant, and because in the practical use of the

Table II

SUGGESTED VALUES FOR ENLARGING PAPERS
Printing Range, Steepness, Sensitivity

Enlarging Paper (Class B)	Printing Range d 0.03 to 1.30	Slope d 0.03 to 1.30	Speed 1/E for d = 0.8
EH—range	6,0	3,3	
Median	5,0	3,1	30
H—range	from 6,1 to 8,6	from 3,4 to 4,7	
Median	8,4	4,5	62
N—range	from 8,7 to 10,2	from 4,8 to 5,4	
Median	8,8	5,0	80
S—range	from 10,3 to 11,8	from 5,5 to 6,4	
Median	11,6	5,7	80
W—range	from 11,9 to 14,5	from 6,5 to 8,5	
Median	12,1	7,4	130
EW—range	14,5	8,6	
Median	16,0	9,6	80

papers exposure times of the order of 0.5 to 5 seconds are considered as "normal" in most cases, the exposing apparatus for photographic papers must permit variations in the exposure (E = i x t) of i at least by the factor 10^4, while t may be kept constant at 5 seconds for example. Thus the following principal demands for the exposing apparatus for photographic papers result:

1. The apparatus must contain a light source of sufficient intensity to expose sufficiently during 5 seconds through a transparent gray wedge the commercial paper of lowest sensitivity.
2. The apparatus must be so constructed that the intensity of the light reaching the test strip can be varied (e.g. by changing the distance between light source and test strip) to a difference in intensity corresponding to the factor 10^4.
3. The apparatus must be equipped with a reliable uniformly acting shutter which permits variation of t by the factor 10. Suitable is, for example, a curtain shutter with a slit whose width can be varied within the required range.

Definition of Speed

Speed shall be defined in numerical, not in logarithmic, values. The value 1/E = 10,000/num log E for the positive density 0.8 is the speed, so that the sensitivity increases with increasing speed numbers (as in the DIN system for negative materials). The value 1/E which corresponds to 0.8 is read on the characteristic curve resulting from the measurement of the test strip.

Because the speeds of photographic papers which are

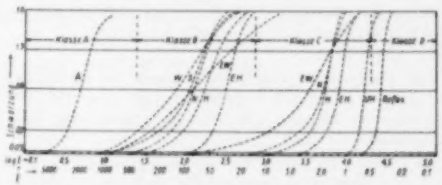


Fig. 2. Division of commercial photographic papers into 4 classes (A, B, C, & D) according to their sensitivity. Symbols are identified in Table 1.

intended for different purposes may lie quite far apart, it appears advisable to divide the papers according to their use in sensitivity types. These types can be characterized by certain limiting values of sensitivity, approximately as in the following arrangement:

Speed Type A:	1/E	> 400
B:		= 15-400
C:		= 0.6 - 15
D:		< 0.6

Of course, the listed speeds for the various classes represent relative values. With the present commercial photographic papers the listed speed classes would cover approximately the following kinds:

Class A: Highly sensitive bromide papers (which frequently are optically sensitized), e.g. document papers, negative papers for portrait exposures, x-ray papers, registering papers etc.

Class B. So-called "silver bromide papers," i.e. the commercial enlarging papers.

Class C: So-called "gaslight papers," i.e. the most frequently used contact papers (usually silver chloride emulsions).

Class D: Contact papers of low sensitivity, reflex papers, etc.

The exposure of the test strips shall be carried out so that 2 to 3 steps of the positive step wedge are deep black and cannot be distinguished from each other, while the fields under the dense steps of the wedge remain completely unexposed. With the proposed transparent gray wedge with 30 steps of the density 0.1 to 3.0 this is entirely possible with the proper choice of the exposure.

Definition of the Gradation

(a) Printing Range (KU)

The printing range is the abscissa value of the projection of the density curve between the density points 0.03 and 1.3 on half-matte and 1.55 on glossy papers on the abscissa, multiplied by 10.

The demand is made that the section of the curve whose density lies below 0.03 is not longer than corresponds to the value 0.2 to at most 0.25 on the abscissa. If that is not the case, i.e. if the curve shows a longer section parallel or assymptotic to the abscissa, it means a qualitative defect of the emulsion in question which must be registered and considered in the evaluation.

The proposed density points 0.03 and 1.3 (1.55 respectively), according to extensive practical investigations fit most generally the numerical classification of the printing range, because certain density points—contrary to the tangent border points—are unequivocally defined and cannot lead to confusion.

(b) Slope (S1)

The slope of the characteristic curve can be defined by the sharp angle which is formed by the line laid through the densities 0.3 and 1.30 or 1.55 respectively with the abscissa axis.

This angle is different for pictorially differently working gradations and is a more readily established criterion of the gradation than the maximum slope. It is known to be very difficult to lay a tangent on a curve whose equation is unknown, and therefore such a construction shall be avoided in the system of sensitometry proposed here.

The slope is practically defined as the length of the projection of the curve section between the density points d = 0.3 and 1.3 on the abscissa, also multiplied by 10.

The KU and S1 values can be read unequivocally from the drawn characteristic curve and the corresponding coordinate system. The known difficulties involved in the exact drawing of the characteristic curve shall not be gone into here because this subject has been discussed in detail in the literature.

The values which result from the use of the proposed system for two groups of typical papers are given in table I for a series of contact papers and in Table II for a series of enlarging papers.

The average values given in these tables are taken from the characteristic curves (Fig. 2.) of the commercial paper series of a leading German manufacturer of photographic papers; the curves of other "first-class" photographic papers take a course principally similar in shape as well as with regard to the position in the coordinate system. The deviations from the course of the gradation by themselves are nowhere principally different, and the differences in speed are not of great importance in photographic papers anyhow. However, as is known, considerable difference can be found occasionally in the labeling of certain gradations; one manufacturer calls a gradation "normal" which another labels "hard." Here the proposed evaluation system should bring clarity and uniformity.

Of course, the average values for the various gradations may be chosen differently from those given as examples in the tables. The proposed evaluation system should not be considered at all as completely inflexible. For example, it may prove desirable to create the extreme gradations (ultra hard and ultra soft) (which for technical reasons are more or less fixed) 8 or 9 intermediary gradations instead of 5 or 6. If one wants to avoid the difficulties arising in this case in the gradation labeling ("normal" etc.), one can introduce numbers in place of or besides the degree of hardness designations which are customary in Germany alone, as, for example, some British and American manufacturers do. There the softest gradation is always labeled with the number 1, the next harder one with the following number. If later, for example, between the gradations 4 and 5 another degree of contrast should be introduced, it would have to be designated as 4a or 4b, depending on its location nearer #4 or #5.

By means of the proposed system a certain photographic paper can be defined with sufficient accuracy for the practical user (though not for the scientist) with three identification numbers: with two numbers for the degree of hardness (printing range KU and slope S1) and with one number for the speed 1/E. For example, a paper "contact normal" would be designated as CN 1 9.4 — 3.8 — 3.0, where 1 is the surface designation already generally introduced for white glossy, and the other identification numbers are always given in the order KU — S1 — 1/E.

If such a labeling system will have been in use for some time, all designations such as "normal," "hard," etc. can be omitted, because the identification numbers for KU and S1 supply far better information about the degree of contrast of a certain emulsion than any verbal designation.

BOOK REVIEW

"Photography in Astronomy," by E. W. H. Selwyn, Ph.D., Kodak Research Laboratories, Harrow, England. Published 1950 by Eastman Kodak Co., Rochester 4, N.Y. $2.75.

Dr. Selwyn's book is a 100-odd page introduction to the practice of astronomical photography. It introduces the astronomer to the techniques for photographing astronomical phenomena and likewise opens to the photographer an insight to the fascinating applications of his art in astronomy. The author has an interesting style and skillful manner of explaining the mutual problems of these sciences. Numerous photographs and sketches are combined with down-to-earth explanations to make entertaining reading, in addition to the meritorious technical content of the book.

As an amateur among amateur astronomers, I found the book to be desirable because of its descriptions of "how it is done" and "why it works." As a photographic technologist, I was impressed by the clear and simple, yet not trivial, discussions of photographic theory and techniques. One is led to suspect, intuitively, that professional astronomers, who are only amateur photographers, will be equally impressed. Certainly, the amateur astronomer-amateur photographer should find in this book a deeper appreciation of the professional approach to astronomical photography and even receive inspiration for his workroom projects.

Chapter 1 beautifully illustrates the photography of celestial bodies, the moon, planets and interesting nebulae. Less commonly appreciated scientific photographs of spectroscopic phenomena are introduced. The associated practical problems from both astronomical and photographic origins are narrated at a moving pace that instructs the general reader and satisfies his latent curiosity without involving him too deeply.

Interesting facts are brought out such as the discovery of Pluto resulting from a systematic study of parallax in star photographs; Pluto being revealed as a moving object relative to immobility of the stars in the pictures. Another fact, aptly presented, is that photography of the planets and the moon is fundamentally similar to ordinary terrestial picture taking, since in both cases it is sunlight which illuminates the subject.

Cameras, telescopes and equipment are described in Chapter 2. The characteristics of telescopes in astronomical photography, their resolution of detail, their mechanisms to correct for earth rotation and the problems of spectroscopy are interestingly disclosed. One learns, effortlessly and with increasing fascination, of the spectroheliograph and the coronagraph and how they operate to photograph the spectacular solar prominences.

The properties of photographic materials are briefed in Chapter 3. The sensitometric requirements of astronomical emulsions show the astronomer that these are as highly specialized as his telescope. Dr. Selwyn's explanation of latent-image formation theory is a masterpiece of simplicity and scientific consciseness. Reciprocity and intermittency effects are comprehensively introduced.

Succeeding chapters give much practical advice in achieving the highest quality photographic image. The importance of turbidity, adjacency effects and granularity are scientifically presented, always with practical association to the problems as one actually encounters them. Good darkroom practice is encouraged through specific recommendations in layout and processing techniques. Here is a sample of Dr. Selwyn's knowing remarks: " . . . a light-tight hatch between the developing room and washing room is very desirable in order to avoid the formation of a well-trodden path composed of dried fixing salts . . . "

VERNE H. RECKMEYER.

Photographic Data Bargains

ALL THE standard rollfilm dimensions for determining fit in cameras and successful operation can be purchased for seventy-five cents.

Spool dimensions, film dimensions, backing paper dimensions and the correct spacing of the exposure number printing are given in a 32-page 8½x11 inch American Standard recently revised and republished.

A copy, complete with a history of certain "problem" roll film sizes can be obtaned for seventy-five cents mailed to the American Standards Association, Inc., 70 East 45th Street, New York 17, New York.

Other bargains for camera designers, manufacturers of all types of photographic supplies and equipment for students, teachers, technicians, photo-chemists, laboratory personnel, and individual photographers who wish to learn more about photography or who have trouble with their photographic apparatus or with their methods may be found in the following list of American Standards in the field of photography that have been issued or revised during 1950.

STANDARDS FOR SENSITIZED MATERIALS

Z38.1.7-1950	Dimensions for Amateur Rollfilm, Backing Paper, and Film Spools (Revision of Z38.1.7 thru .24-1943). 32 pages 75 cents.
Z38.1.30-1950	Dimensions for Photographic Dry Plates (Inch Sizes) (Revision of Z38.1.30-1944) Leaflet 25 cents.

CAMERA AND ATTACHMENT STANDARDS

Z38.4.5-1950	Shutter Cable Release Tip and Socket with Taper Thread (Revision of Z38.4.5-1942) Leaflet 25 cents.
Z38.4.6-1950	Shutter Cable Release Tip and Socket with Straight Thread (Revision of Z38.4.6-1942) Leaflet 25 cents.
Z38.4.7-1950	Lens Aperture Markings (Revision of Z38.4.7-1943) Leaflet 25 cents.
Z38.4.8-1950	Picture Sizes for Roll Film Cameras (Revision of Z38.4.8-1944) Leaflet 25c.
Z38.4.26-1950	Flash Synchronizing Equipment: Bipost-Type Connecting Cord Ends and Pins. Leaflet 25 cents.
Z38.4.27-1950	Flash Synchronizing Equipment: Bayonet Type Connecting Cord Ends and Pins. Leaflet 25 cents.

STANDARD TESTING METHODS

Z38.7.6-1950	Methods of Testing for Photographic Enlargers. 4 pages 35 cents.
Z38.8.25-1950	Method for Determining Residual Thiosulfate and Tetrathionate in Processed Photographic Papers. 8 pages 35 cents.

PHOTOGRAPHIC GRADE MATERIAL STANDARDS

Z38.8.14-1950	Requirements for Photographic Wetting Agents, Leaflet 25 cents.

Photo-Micrography *with the Phase Microscope*†

OSCAR W. RICHARDS*

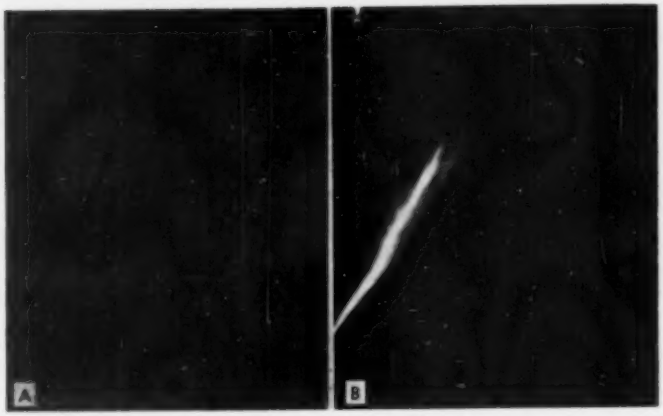


Fig. 1. Glass fragment ($n_D = 1.52$) mounted in balsam ($n_D = 1.54$). Reproduced at a mag- micrograph, exposed ½ sec. C. Phase photomicrograph, Bright contrast, exposed 1/10 sec. Panatomic X was used in a Spencer photomicrograph camera (no lens) and developed 5

THE PHASE microscope is used for the examination of unstained, living cells and tissues, emulsions, glass and plastics, minerals and materials too transparent for other kinds of microscopes. These specimens usually contain regions of different optical path (refractive index X thickness) which alter the phase relations of the light passing through them. The eye and the photographic plate both are insensitive to phase differences. The phase microscope adds an annular diaphragm to the condenser and a diffraction plate into the objective of the usual brightfield microscope. These acting together transform the phase alterations in the light from the specimen into observable and photographable amplitude, or intensity differences. By use of an appropriate diffraction plate the contrast in the image can be increased or decreased, and reversed and increased or decreased. Details on the history, theory and use of the phase microscope are available[1, 2, 3].

Photographic records are as easily made with the phase microscope in the same manner and follow the same rules and methods as other photomicrographic procedures. Nearly all the published papers on phase microscopy are illustrated with photomicrographs which attest this statement[3]. Color may be recorded with color films when it is a desirable part of the record.

The ability to see details and follow physiological processes in the living organisms, hitherto invisible, early brought out the value of making such records with the motion picture camera. Grasshopper spermatogenesis was recorded in dark (A—) contrast in a notable film by Michel[11]. Harrison *et al*[9] filmed the serological reactions of a green and colorless species of *Paramecium bursaria* using Ansco Color motion picture film; color was important as a natural marker indicating the sensitized animals. In England, Hughes and his colleagues have used phase microscopy and phase combined with polarization microscopy for films of dividing cells[9]. A phase motion picture of tumor cells was produced by Dr. G. O. Gey[7] and a tissue culture film of salamander lung cells was made by Danes[4]. Motion pictures of spermatozoa have been used by Farris[6] in the investigation of human infertility. Films showing the growth and life histories of fungi should be valuable and with long focus methods that permit the use of normal cultures in Petri dishes that could be made under normal conditions of growth[13].

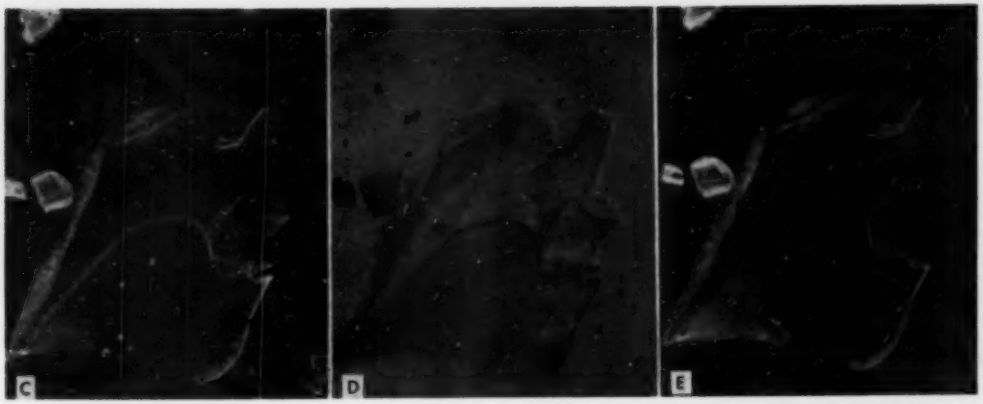
The phase microscope is used in place of a brightfield microscope, or phase accessories may be added to existing equipment. The slightly longer exposures are usually not a serious handicap. An 100 watt lamp has been found more than adequate for illumination when color film was used. Various kinds of equipment for this work have been described[9, 10, 12].

Photomicrographs for use in reconstructions or models should be made with the objective of highest numerical aperture appropriate to the specimen in order to obtain optical sections having minimal depth of field. When thicker sections are to be photographed an objective with the lowest numerical aperture capable of giving the required resolution should be chosen and used with higher power oculars to achieve the necessary magnification. A magnification of 1000 times the numerical aperture of the objective is often satisfactory. However, greater amounts of magnification are useful with the phase microscope to bring out the increased contrast and detail revealed. The classical Abbe theory of resolution is not adequate as a guide in photomicrography, and rarely applicable in practical microscopy wherein extended objects are commonly observed rather than the separation of two adjacent geometrical image points.

One of the main advantages of the phase microscope arises from the sharp edges of specimens free from indefinite diffraction patterns. Precise measurements are

†A chapter from *Phase Microscopy* by Bennett, Richards, Osterberg, and Jupnik printed by permission of the authors and the publisher, John Wiley and Sons, Inc., who expect to issue the book in 1951.

*Research Laboratory, American Optical Company, Stamford, Connecticut.



nification approximately 100 × from 150 × photomicrographs. A Brightfield photomicrograph, exposed 1/25 sec. B. Darkfield photo-
D. Phase photomicrograph, Dark Contrast (B-1), exposed 1/10 sec. E. Phase photomicrograph, Dark contrast (A-), exposed 1/5 sec.
min. in DK-50. A Spencer 730 lamp was the illuminant.

possible for living microorganisms and colloidal materials wherein staining methods would so alter size that the measurements could not be interpreted. However, such measurement is not often possible visually because of the motion of the specimen and ordinary photomicrographic procedures do not permit exposures fast enough to avoid blurring from movement. This problem was solved in 1945 when Richards, Foster and Wennemark took phase photomicrographs using an Edgerton type of electronic flash. The newer G.E. FT-230 flash tube has proven even more satisfactory for this use.[16] A lens system magnifies and images the electrodes of the tube on either side of the opening in the microscope condenser. Discharging an electrical condenser through the tube provides a rapid flash uniform enough to fill the aperture of the microscope and short enough to effectively stop Brownian and other motions of the specimen.

It is necessary to add a source of continuous light for focusing the microscope, which was accomplished by focusing the aerial image of the filament of a small microscope illuminator between the electrodes of the FT-230 tube. This image was automatically focused in the microscope aperture and was turned off before the high speed flash exposure. The light is adequate for good negatives on the high speed black and white emulsions. Photomicrographs have been made at 1800X with all contrasts of the Spencer oil immersion phase objectives with loadings of 2 to 2.5 KV and 75 to 120 μfd. (150-250 watt-seconds). The exposure duration was estimated to be about 1/35,000th second by Mr. Frank Carlson of the General Electric Company to whom the writer is grateful for assistance and equipment. The flash tubes and power packs are available commercially, and lens systems can be combined to illuminate the microscope. By adding a timing circuit to the timelapse motion picture equipment such a source could be used although, as Carlson points out, the resulting pictures may be so sharp as to appear jerky on projection.

With the phase microscope, film is chosen using the same criteria as in any other kind of photography. A process or positive type emulsion can be used when the specimen is uncolored and there is enough light. In general a fine grained type B panchromatic film is suitable for general use, such as Panatomic X, or its equivalent, and developed in DK-50 using time and temperature. Others will get equally good results with other materials and procedures. When color differentiation is important the emulsion used must be sensitive and capable of recording the color directly as a colored image or in black and white with the correct tonal densities.

With Spencer phase equipment, Richards[16] found that the 1B-0.25λ diffraction plate did not require increased exposure. The 0.2 $\pm$ 0.25λ low contrast diffraction plates usually took about the same exposure as would be required by brightfield with the condenser closed enough to give best contrast on the ground glass. The higher contrast 0.14A $\pm$ 0.25λ and 0.07A $\pm$ 0.25λ plates will often require twice to four times the equivalent exposure that would be used by brightfield. Other makes of phase equipment with narrower conjugate areas require correspondingly longer exposures. These figures are suggestive only and should assist the microscopist toward the proper exposure. More exact exposures can be obtained with the use of exposure meters appropriate for use in photomicrography. When colored light and color filters are used the exposures will be increased accordingly by the usual factors. Even with the best equipment some experience is necessary and sometimes recourse to trial and error methods for exposure determination may be required.

Stereophotomicrographs are useful to show the third dimension of a specimen and may be made by several methods. With low powers the specimen may be tilted about 7 degrees and one picture made, then tilted to the same amount in the opposite direction and the second picture of the stereo pair photographed. With higher magnifications there is not enough depth of field for this pro-

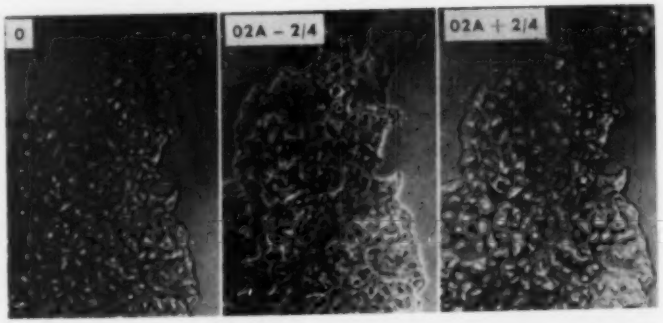


Fig. 2. Unstained, living epithelium from the frog. Reproduced at a magnification approximately 75 × from 110 × photomicrographs. Left to right: A Brightfield photomicrograph, exposed 1/50 sec. B. Phase photomicrograph, Dark contrast, exposed 1/25 sec. C. Phase photomicrograph, Bright contrast, exposed 1/25 second. Same photography as Fig. 1.

cedure and the half aperture method is satisfactory when the loss of half of the resolution is of no consequence. A piece of black Scotch tape is placed to cover one-half of the annulus and the first picture made. The annulus is rotated 180° or the tape removed and placed on the opposite half of the annulus and the second exposure is made. The two exposures of the pair should be processed together and mounted so that corresponding points are about 2.5 inches apart and so that horizontal lines in each are in line to avoid tilt. The mounted pair may be viewed with a stereoscope for study of the third dimension or, after some practice, fused on direct observation. Hold the picture so that by looking over it one may see some object at a distance. By quickly dropping the eyes to the pictures they will fuse into one with tri-dimensional depth. Try to look through rather than at the pictures so that the accommodation will be relaxed.

The *important precaution in phase photomicrography* is to make sure by checking with the telescope that the image of the annual diaphragm is concentric with and superimposed on the diffraction plate. Any light leakage will markedly decrease the contrast in the photograph. Light leakage around the conjugate area will spoil the definition of the photomicrograph more than leakage around the outside of the objective, although both should be avoided. Glare from light leakage is additive in photography because the camera cannot focus and adapt like the eye. Proper alignment should not be neglected for efficient visual microscopy. For adequate photomicrography the condenser must be centerable and the annuli for the various apertures also must have individual centering screws to make possible correct alignment. Unless the equipment can be permanently aligned, it is well to do so immediately before taking a picture. Especial care must be taken when long focus condensers are used. Otherwise photomicrography with the phase microscope is the same as with other equipment.

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Table II

EFFECT OF OZONE LATENSIFICATION ON MAXIMUM GRAININESS

Film Sample	Treatment	Maximum Graininess (1000/M)
Kodak Super Panchro-Press, Type B	Untreated	254
	Ozone	216
Kodak Blue Brand X-ray	Untreated	280
	Ozone	263
Kodak Super-XX Panchromatic	Untreated	192
	Ozone	164
Eastman Release Positive, Type 1301	Untreated	189
	Ozone	178

Latensification Studies with Ozone†

W. VANSELOW, E. K. COLTON, AND E. J. WIEGAND*

AUTHORS' ABSTRACT

Studies have been made of the latensification of a number of commercial films by ozone in the vapor phase. When films were processed under normal conditions, ozone latensification was effective with Kodak Super Panchro-Press, Type B Film, Kodak Blue Brand X-ray Film, Kodak Super-XX Panchromatic Film, and Eastman Release Positive Film, Type 1301. Measurements showed that ozone latensification did not have a significant effect on the graininess of the images obtained on development.

A study was also made of the effect of development time on the degree of latensification by ozone of Kodak Blue Brand X-ray Film; the degree of latensification decreased as the completeness of development increased, and, for complete development, no significant latensification was obtained. It is concluded that latensification does not increase the number of developable grains but increases the rate at which the exposed grains develop.

VARIOUS methods have been described[1, 2] for increasing the effective emulsion speed of photographic materials by a treatment after exposure and before development which is known as "latensification."[3] The most effective agents investigated include post-exposure,[4] hydrogen peroxide,[5] mercury,[6] sulfur dioxide,[7] organic acids,[8] sodium perborate,[9] and gold.[10]

The dependence of latensification upon the degree of development of a photographic material was investigated by James and Vanselow,[11] who found that latensification decreases with increasing time of development and has largely or completely disappeared at the point of maximum development.

The present paper gives the results of latensification studies using ozone which was found to increase the speed of several emulsions to an appreciable extent for development conditions normally used in photographic practice.

Experimental Procedure

Ozone latensification experiments were made with the following films: Kodak Super Panchro-Press Film, Type B, Kodak Blue Brand X-ray Film, Kodak Super-XX Panchromatic Film, and Eastman Release Positive Film, Type 1301.

Exposure times on the Eastman Ib Sensitometer for the four films were: Kodak Super Panchro-Press, Type B, 1/100 second; Kodak Blue Brand X-ray, 1/50 second; Kodak Super-XX Panchromatic, 1/50 second; and Eastman Release Positive, Type 1301, 1/10 second. Untreated controls were run with each experiment.

In most of the experiments, the film strips tested were treated with ozone in all-glass, light-tight containers. A slow flow of a mixture of approximately 4 per cent ozone in oxygen was introduced successively into each end of the container for 5 minutes. The total flow of the ozone-oxygen mixture was 0.75 liter per container of 750-cc volume. Inasmuch as the displacement of the air by the mixture was not complete, the ozone concentration in the containers was less than 4 per cent. The ozone-treated strips were left in the glass containers for approximately 1½ hours and then transferred to neutral containers, in which they were kept for 18 to 24 hours before being processed.

In other experiments the film strips were suspended for 24 hours in a larger container in which the ozone concentration was 1 to 1½ parts per million parts of air.

Developments were as follows: Kodak Super-XX Panchromatic Film, 20 minutes in Kodak DK-20 Developer; Eastman Release Positive Film, Type 1301, 4 minutes in Kodak D-16 Developer; for the other two films, 3 minutes in Kodak Rapid X-ray Developer. The films were then fixed, washed and dried in the customary manner.

Table I

EFFECT OF OZONE LATENSIFICATION ON DENSITY-SPEED, GAMMA AND FOG

Film	Treatment	Speed*	Gamma	Fog	% Speed Increase
(Group A)					
Kodak Super Panchro-Press, Type B	Control	4850	0.93	0.10	
	Ozone	6550	0.91	0.10	35
Kodak Blue Brand X-ray	Control	3800	2.36	0.16	
	Ozone	7200	2.18	0.22	89
Kodak Super-XX Panchromatic	Control	2850	0.73	0.30	
	Ozone	3800	0.65	0.21	33
Eastman Release Positive, Type 1301	Control	104	1.86	0.03	
	Ozone	150	1.41	0.03	44
		Speed (*Relative*)			
(Group B)					
Kodak Super Panchro-Press, Type B	Control	190	0.87	0.04	
	Ozone	380	1.00	0.03	100
Kodak Blue Brand X-ray	Control	138	2.30	0.05	
	Ozone	150	2.10	0.05	9

*30/E at density 0.2 above fog plus base.

The sensitometric data have been listed in Table I; the speed increases (expressed in percent) are also given. For the films, Kodak Super Panchro-Press, Type B, and Kodak Blue Brand X-ray, the results (listed in Parts A and B of Table I) are not quantitatively in agreement. However, the discrepancies are not surprising, in view of the difference in the concentrations of ozone used in the two series of experiments.

Graininess

The effect of ozone latensification upon the graininess

†Communication No. 1358 from the Kodak Research Laboratories. Received July 27, 1950.

*Eastman Kodak Company, Rochester, New York.

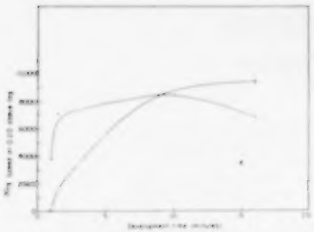

Fig. 1. Speed vs. development time for Kodak Blue Brand X-ray Film in Kodak D-19 Developer containing α-picolinium-β-phenylethyl bromide:
—O—O—, untreated;
—X—X—, ozone latensified.

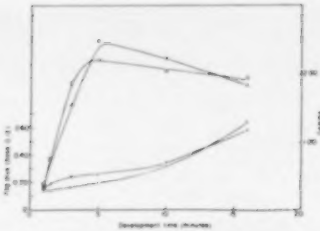

Fig. 2. Fog and gamma vs. development time for Kodak Blue Brand X-ray Film in D-19 Developer containing α-picolinium-β-phenylethyl bromide:
Fog: —O—O—, untreated;
—X—X—, ozone latensified.
Gamma: —Δ—Δ—, untreated;
—□—□—, ozone latensified.

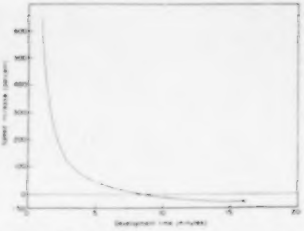

Fig. 3. Speed increase (percent) vs. development time for Kodak Blue Brand X-ray Film in D-19 Developer containing α-picolinium-β-phenylethyl bromide.

of the developed photographic image was studied by the blending-magnification method.*

The graininess values are equal to $1000/M$, where M is the blending magnification at a viewing distance of 2 meters and with a field luminance of 50 foot-lamberts, with no sample in place. The maximum graininess ($1000/M$) values for the four emulsions are listed in Table II.

On examination of the complete graininess-density data, it can be concluded that, with the exception of Super-XX Film, the ozone-treated test strips exhibit slightly lower graininess at equal densities than the untreated sample test strips. In the case of the Super-XX samples, the ozone-treated sample exhibits slightly lower maximum graininess at densities below 0.5, but at all densities above 0.5, the ozone-treated sample is somewhat coarser than the untreated sample.

It will be noted in Table I that the ozone-treated samples have generally a slightly lower gamma than the controls. This would mean that prints made from these ozone-treated materials have to be printed on a slightly higher

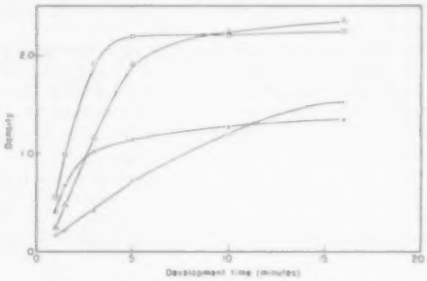

Fig. 4. Density vs. development-time curves for Kodak Blue Brand X-ray Film in D-19 Developer containing α-picolinium-β-phenylethyl bromide:
Log E = $\overline{2}$; —O—O—, untreated.
Log E = $\overline{2}$; —X—X—, ozone latensified.
Log E = $\overline{2.5}$; —Δ—Δ—, untreated.
Log E = $\overline{2.5}$; —□—□—, ozone latensified.

*The authors are indebted to Dr. L. A. Jones and Dr. G. C. Higgins, of these Laboratories, for making these measurements.

Table III

OZONE LATENSIFICATION OF KODAK BLUE BRAND X-RAY FILM

Treatment	Development† (Minutes)	Speed‡	Gamma	Fog Plus Base*	% Speed Increase	% Gamma Change	Density Log E $\overline{2}$	Density Log E $\overline{2.5}$
None	1	510	0.55	0.14			0.17	0.25
Ozone	1	3800	0.57	0.16	645	5	0.40	0.55
None	1½	1940	0.71	0.14			0.22	0.48
Ozone	1½	7050	0.76	0.19	355	7	0.68	0.98
None	3	3450	1.53	0.16			0.42	0.15
Ozone	3	7550	1.85	0.24	113	21	1.01	1.91
None	5	5450	2.48	0.19			0.72	1.91
Ozone	5	7900	2.20	0.26	45	−11	1.13	2.19
None	10	8850	2.22	0.32			1.19	2.24
Ozone	10	8450	2.04	0.35	−5	−8	1.25	2.20
None	16	9500	1.84	0.65			1.51	2.35
Ozone	16	6900	1.96	0.59	−28	+7	1.33	2.24

†D-19 plus α-picolinium-β-phenylethyl bromide. ‡$30/E$ at density 0.2/fog and base. *Density of base = 0.12.

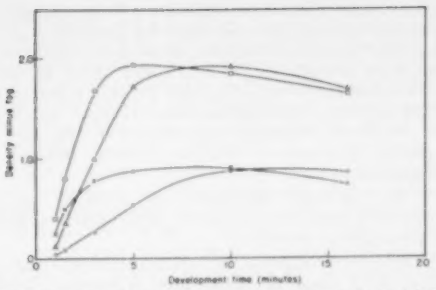

Fig. 5. Density minus fog vs. development-time curves for Kodak Blue Brand X-ray Film in D-19 Developer containing α-picolinium-β-phenylethyl bromide:

Log E = 2;	**—O—O—, untreated.**
Log E = 2;	**—X—X—, ozone latensified.**
Log E = 2.5;	**—Δ—Δ—, untreated.**
Log E = 2.5;	**—□—□—, ozone latensified.**

contrast printing medium. It is not possible to predict to what degree these differences in gamma will affect the relative graininess of prints.

Development-Time Series with Kodak Blue Brand X-ray Film

A development-time series was made with ozone-latensified Blue Brand X-ray Film. Development was performed using D-19 containing 0.5 gram of α-picolinium-β-phenylethyl bromide per liter of developer. The results are listed in Table III. Speed is plotted against development time in Figure 1. Gamma and fog are plotted against development time in Figure 2. The percentage increase in speed is plotted against development time in Figure 3. At shorter periods of development the speed increase is great but, for 10-minute development, a loss is observed which is not accounted for by fog increase. Ozone latensification did not increase fog at the longer developments but did at the shorter periods.

Density is plotted against development time in Figure 4 and density minus fog against development time in Figure 5. The maximum density at log $E = 2.5$ for the control is 1.92, attained with 10-minute development, while that for the ozone-treated samples was 1.93, reached in 5-minute development. That the maximum densities are the same for the untreated and ozone-treated samples is quite in keeping with earlier observations by James and Vanselow[11] on the action of other latensifying agents on Eastman Release Positive Film, Type 1301. Latensification does not increase the number of developable grains but increases the rate at which at least some of the grains develop.

The mechanism of the ozone latensification has not b n established, but that its action is not a pH effect has been reasonably well shown by direct pH measurements.

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Photographic Pigment Printing Processes†

WERNER G. ALEXEWICZ*

PHOTOGRAPHIC PIGMENT processes were in use long before the conventional method of making photographic prints by means of silver-halide emulsions was known. Development of such printing processes was made possible by the discovery of Suckow (1830) that dichromates, when exposed to light in the presence of organic matter, were reduced. Ponton (1839) first suggested use of this reaction as a method of photography. This was about the time that Daguerre published his process and Talbot began the experiments which later developed into silver-halide photography.

If the organic matter reacting with dichromate consists of colloids like gelatin, albumen, gum arabic, etc., the reduction products of the dichromate have the effect of hardening or tanning these colloids. The degree to which the dichromates are reduced and, also, the degree of hardening is porportional to the amount of light responsible for the reaction.

Some time after Suckow's discovery, Poitevin conceived of utilizing these reactions to obtain a visible and permanent image. He added powdered carbon (carbon black), a pigment, to gelatin. Since that time, this now classical method of pigment printing has been called "carbon printing". Scores of people took up the ideas of these pioneers, working out many improvements and new applications. Within a decade or two the patent files were deluged with applications related to the new process. Wall and

†Delivered at a meeting of the PSA Southern California Technical Section. Received September 15, 1950.
*McGraw Colorgraph Company, Burbank, California.

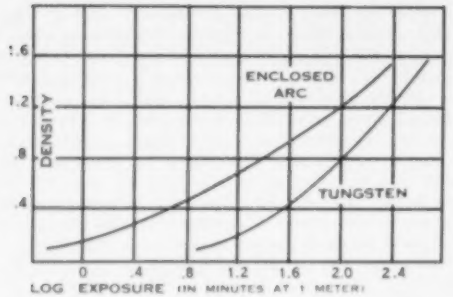

Fig. 1. Effect on bichromated gelatin of time exposures to 200 V, 10 amp arc light and 1000 W tungsten light. (After H. M. Cartwright).

Friedmann, in their books on the history of color photography, present an abundance of data. Important were the disclosures by Sir Joseph Swan (1864), who published complete instructions for preparing carbon tissue and for its use as a printing medium, and the findings of Farmer and Manley, who discovered that a silver image in place of light could be utilized to reduce the dichromate and to produce a selective hardening of the gelatin. These discoveries led finally to the development of the *carbro* and the bromoil processes.

Dichromated gelatin is much less light-sensitive than silver-halide emulsions and requires strong actinic light and relatively long exposures. Nevertheless, due to the superior quality of their tone rendition, the dichromate processes have received much attention. The characteristic curve of dichromated gelatin is practically a straight line with scarcely any region of underexposure and no region of overexposure. Therefore, carbon prints have highlights of fine distinction and delicate gradation with shadows which are open and full of detail.

Sensitometry of Pigment Processes

Since all pigment printing processes are modifications of the dichromate-gelatin or dichromate-colloid process, it is of interest to review how much is known about the sensitometry of this process.

A search through the literature discloses only a few papers on this subject and most of the authors consider the matter in connection with some specific method. This is not surprising since the variables entering sensitometric work in the field of dichromate-gelatin are much more numerous and more complex than those in the corresponding field of silver-halide emulsions. The composition of the tissue, the variables encountered in its manufacture, variations in the strength and chemical nature of the sensitizers and the character of exposing light are only a few of the factors involved. Nevertheless, there are some data available which are instructive and which may well serve as a general illustration of the sensitometric behavior of dichromated gelatins.

H. M. Cartwright investigated the action of light on dichromated gelatin in connection with studies regarding the photogravure process.

In this photomechanical reproduction method a negative gelatin relief image or carbon print is prepared from a continuous tone positive on a copper plate or roller. The various thicknesses of this gelatin print, or "resist", then control the action of one or more etching solutions on the copper.

Cartwright's investigations in part were concerned with the gradation obtainable by the carbon process, particularly with reference to the spectral composition of the light and the concentration of the dichromate solution.

Figure 1 illustrates a comparison between tungsten light and enclosed arc light. The sensitizing solution in this case was 2½% potassium dichromate ($K_2Cr_2O_7$). The arc light (200 V, 10 amp.) curve shows more speed and is flatter than that for tungsten light (1000W). The higher speed is to be expected because the predominant spectral sensitivity of dichromate-gelatin is in the short wavelength section of the spectrum, being highest between 350 μ and 420 μ and extending to approximately 455 μ. There is no flattening with long exposures although the maximum exposures given were nearly sufficient to insolubilize the gelation through to the paper support.

The curves in Fig. 2A and Fig. 2B illustrate gradational differences due to variations in concentration of sensitizer for both tungsten and carbon light.

The curves for tungsten light (Fig. 2A) show an increase in speed with higher concentrations but scarcely any change in gradation. The concentrations used were 5%, 2½% and 1¼%.

The corresponding curves for arc light (Fig. 2B) look quite different. Again a much flatter curve is produced. However, there is a significant difference in gradation for the different concentrations. Tissue sensitized in a strong dichromate solution exhibits increased sensitivity to light of low intensity (or short exposures) but is proportionately less affected in the highlight area the stronger the sensitizing solution.

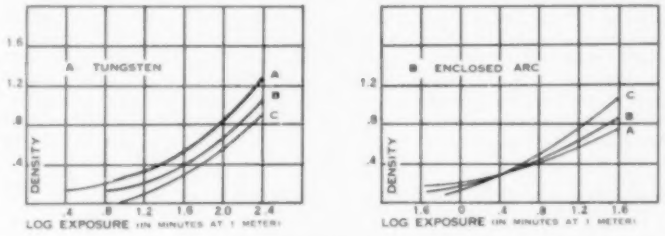

Fig. 2. Effect on gradation of various concentrations of potassium dichromate sensitizer. (2A) Shows the response to tungsten light; (2B) the response to arc light. (After H. M. Cartwright). Sensitizations with potassium dichromate were: A = 5%, B = 2.5%, C = 1.25%.

This is doubtlessly explained by the fact that the violet and ultra-violet rays emitted by an arc light cause rapid insolubilization of the surface layers of the gelatin but do not penetrate to any great depth because of their absorption by the yellow dichromate. Generally, dichromate sensitizers of lower concentration give more contrast than those of higher concentration. These points should be remembered for satisfactory pigment printing.

V. Richter made a notable study of dichromated gelatins in order to establish the relationship between density and light intensity, especially with reference to the Bunsen-Roscoe reciprocity law. For his experiments he used gelatin-coated plates with carbon black as pigment. They were sensitized in a 1% $K_2Cr_2O_7$ solution and exposed to sunlight in a sensitometer (Figure 3). The abscissa represents logarithms of the intensities, and the ordinate, densities. The parameters of the individual curves are the exposure times.

It is significant that all these curves are straight lines; that, in other words, the density is a linear function of the logarithm of the intensity. Furthermore, it is of interest to note that in contrast to silver-halide emulsions there is no toe nor shoulder, in spite of the relatively large intensity scale of approximately 1 to 100. In order to find the relation between density and exposure time at constant intensities, the curves were arranged (Fig. 4) so that the logrithms of the exposure times are on the abscissa; the densities, again on the ordinate, while the parameters represent the intensities.

The Bunsen-Roscoe reciprocity law states that the product of a photochemical reaction is proportional to the total energy involved, i.e. the product of intensity (I) and time (T), and is independent of the absolute value of either factor separately.

This law does not hold for photographic silver-halide emulsions. The latter show the well known reciprocity law failure. If, however, a constant p (which is called the Schwarzschild factor) is used as an exponent with the product $I \times T$, then this equation ($I \times T^p$) will be constant for a given density. p can be calculated for certain conditions and varies with different types of emulsions.

If, now, the Bunsen-Roscoe law applies for the dichromate-gelatin curves, then the product of $I \times T$ for a given density should have been constant. This, however, was not the case (see Fig. 4). Rather, it was found that here, too,

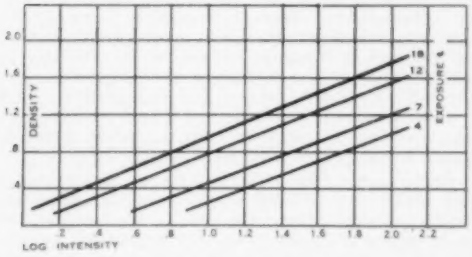

Fig. 3. Bichromated gelatin (1% $K_2Cr_2O_7$) with carbon black pigment densities plotted against intensity of sunlight. (After V. Richter).

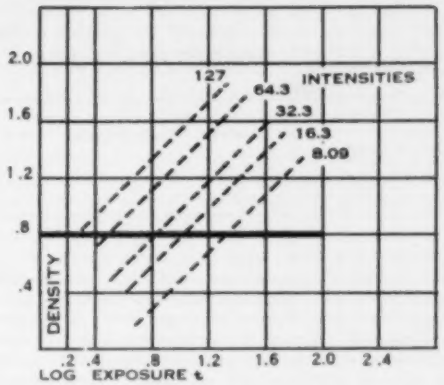

Fig. 4. Data from Fig. 3 plotted density vs. log exposure time at constant intensity. (After V. Richter).

	Values of $I \times t$ for density .8:				
$I \rightarrow$	127	64.3	32.3	16.3	8.09
	253	218	199	179	151
	Values of $I \times t^p$ ($P = 1.27$)				
$I \rightarrow$	127	64.3	32.3	16.3	8.09
	299	292	299	317	304

a Schwarzschild factor p could be calculated which rendered the products of $I \times T^p$ constant for the same density.

The fact that, with reference to reciprocity law failure, dichromate gelatins behave similiarly to silver-halide emulsions is worthy of note in view of the fact that most explanations for the reciprocity law failure go back to the kinetics of the latent image formation of silver-halide emulsions. There must be, obviously, some other explanation for the behaviour of dichromate-gelatins. However, as far as we know, no attempts at further research in this direction have been made.

It is of interest to note that Richter's results were not confirmed by Walter (Phot. Korrespondenz, 1935) who found no reciprocity failure, his medium value for the Schwarzschild exponent being $p = .978$; while Eder (Handbuch 1926, III, 4) and Huebel (Phot. Korrespondenz, 1918) found the factor to be approximately .85, i.e., lower than Richter's value. However, these discrepancies might have been due to the difference in testing materials used by the various investigators.

Summarizing these facts, we see that dichromated gelatin is chiefly sensitive to the ultraviolet and violet part of the spectrum; also that light of longer wavelength penetrates deeper and gives more contrast, but requires longer exposure times than light rich in ultraviolet. With carbon arc light, sensitizers of lower concentrations result in less speed but higher contrast than those of higher concentration. We know, further, that the characteristic curve is long and straight and that, therefore, dichromate-gelatin layers have a latitude considerably broader than that of silver-halide emulsions.

There are a few more facts which have been investigated from time to time. There is, for instance, the so-called "staling effect" of sensitized tissue. Tissue, after sensitizing, increases in speed and becomes less soluble with age,

TABLE 1.

PIGMENTS USED COMMONLY IN PIGMENT PRINTING PROCESSES

Inorganic		Organic Materials				
				Phthalocyanine		
Examples:	Iron Oxides	Carbon Black	Azo Dyes	dyes	Basic Lakes	Acid Lakes
Titanium dioxide	Lithopone		*Examples:*	*Examples:*	*Examples:*	*Examples:*
Vermilion red	Cadmium red		Hansa yellow	Cyan blue	Auramine	Napthol yellow
Chrone yellow	Prussian blue		Permanent Red R	Monastral blue	Rhodamine	Ponceau
Cadmium yellow	Ultramarine blue		Fire Red Toner		Methylene blue	Tartrazine

particularly in a moist, warm atmosphere. There is also an effect of intensification of the latent image, the so-called "continued action". After sensitive tissue has been exposed to light the insolubilization continues slowly in the dark, the speed and degree of this action again depending upon temperature and humidity and such chemical factors as the type of sensitizer, pH and others. Fortunately in practical printing it is relatively easy to by-pass most of these variables.

Chemistry of Pigment Processes

Although the dichromate-gelatin process with its end products has been known for a hundred years, the chemistry and fundamental theory of the reaction have yet to be explained satisfactorily. It is perhaps for this reason that few basic improvements have been made in dichromate processes since discovery of the effect.

In defense of the chemists, P. C. Smethurst recently pointed out why the analytical phase of such investigations is so complex. The main difficulty, he explained, in establishing the primary light reaction is that the result of exposure is insolubility in the usual solvents, making an attempt to redissolve the resulting product (for the purpose of analysis) quite likely to introduce secondary complications which obscure the primary issues.

An early theory that the reaction resulted in the formation of free oxygen and that the end product was due to absorption of oxygen by the gelatin under formation of "oxyglutin" has been abandoned. Today, it seems most likely that under the influence of light some lower chromium oxides are formed which, in turn, form adsorption compounds with the gelatin, rendering the latter insoluble. Whether these chromium compounds have the formula of a chromic chromate $Cr_2O_3.Cr\ O_3$ as suggested by Eder and others, or the formula of a chromium oxychromate $(CrO)_2.CrO_4$, as postulated by Eggert and Biltz, is not quite certain.

It is well to consider briefly the physiological properties of dichromates. Both chromates and dichromates are poisonous compounds. Contact of the broken skin with solutions of these chemicals can produce painful sores and a tenacious skin poisoning. Although not everyone is susceptible to this type of poisoning, it is a worthwhile precaution to wear rubber gloves when handling pigment paper in dichromate solutions.

Types of Pigments Employed

The term "pigment" denotes an insoluble coloring matter. Pigments are generally classified according to their structure as mineral (inorganic), or as organic colors. The latter are derived from natural or synthetic dyes. Further, organic pigments include insoluble pigment dye stuffs and lake pigments, made from soluble dyes by precipitation upon various substrata such as aluminim sulfate, phosphates, kaolin, etc. These lake pigments are usually prepared from basic or acid dyes. Typical examples of pigments much used in this industry are shown in Table I.

Several factors enter into the selection of materials for pigment printing. Such pigments must be easy to disperse, resistant to light and unaffected by the solutions used in the process. In addition, for three-color work, spectral characteristics are of prime importance. Although a great variety of pigment shades is on the market, relatively few of them meet the requirements in all respects.

Individual Pigment Printing Processes

There are two chief types of printing processes, one in which the pigment is incorporated in the printing material, and the other in which the pigment is laid on by hand.

The oldest method in the first group is *carbon* printing. In its simplest form a pigmented gelatin paper is sensitized in a dichromate solution, dried and exposed under a negative. Incidentally, a statement frequently found in text books to the effect that sensitized tissue when wet is not light-sensitive is a fallacy. It only requires much longer exposure. When wet tissue is used, it is advisable to squeegee the tissue to a very thin sheet of clear vinylite and to expose through the vinylite. To prevent melting during the exposure, a heat absorbing filter may be used before the light source.

After exposure the dry tissue is soaked in water and squeegeed either directly onto the final support or first to a vinylite sheet from which it is later transferred after development to the final support. As final support almost anything may be used, paper, glass, porcelain, etc. Development takes place in warm water (100 to 110 F) which dissolves the soft portions of the gelatin layer, i.e., those not hardened by exposure. It is obvious that the direct or single transfer method results in a reversed positive, while the double transfer reproduces the sides correctly.

Multiple printing is possible, and if properly colored tissues are used in connection with separation negatives, carbon printing can be used for tricolor-printing.

Belcolor, now little used, is a tricolor carbon process and utilizes thin celluloid sheets coated with pigmented gelatin. After sensitizing and drying, the sheets are laid under appropriate negatives and exposed through the back. The sheets are then developed in hot water, dried, and bound together to produce a three-color transparency. Because of its simplicity this process formerly was exten-

sively used by photoengravers as a convenient means of proofing separation negatives.

A similar process uses *Dufaycolor* tissue, introduced commercially only a year ago. The chief innovation in this method is incorporation of a rapid-drying adhesive which enables the transparent reliefs to be stripped and transferred to a final support paper.

Additional proof that tricolor carbon printing still holds the interest of color printing technicians is contained in two patents issued late in 1945. One of these was granted to Ball and Plotin and assigned to McGraw Colorgraph Company. The other, granted to Ernest Symmes, has been acquired by the Autotype Company in London. The McGraw patent features semi-wet printing through clear vinylite supports and automatic registration; the registration being covered by three additional patents. The Symmes patent covers wet printing through celluloid sheets and includes semi-automatic masking made possible by exposing the magenta layer through the previously formed cyan image as mask for the green filter negative, and exposing the yellow layer through the combined cyan-magenta images as mask for the blue filter negative.

Neither of the patents cited has much value for commercial use. A shortcoming common to all the above processes, including the Dufay tissue, is their slow speed. This characteristic, for all practical purposes, restricts the methods to contact printing. Enlargements can be made only with expensive, complex and difficult to handle specialized lighting equipment. Another considerable disadvantage lies in the fact that the exposure given each element cannot be evaluated until the final print is assembled.

Similar to carbon printing is *gum printing*, an old method still cherished by experimentally-minded amateurs as a satisfactory and satisfying printing process. Gum printing makes use of paper coated with a solution containing gum arabic, pigment and also the dichromate sensitizer. As dichromated colloid layers deteriorate rapidly the paper must be prepared and coated by the individual user.

The prepared paper is exposed under a negative and developed in cold water. Transfer is unnecessary as the shadow portions, having been exposed through the thin layer clear down to the support, are anchored to the paper. The soluble portion of the gum layer seeps out between paper and insolubilized gum during development. The process requires an extremely thin coating and, since the resulting images have a rather short density scale, multiple printing is usually a must. However, it is these same features of the gum method which are of intense interest to anyone concerned with fundamental problems of photographic reproduction and tone rendition. Multiple printing makes it possible to use negatives of great variety in density, and to print separately the highlight and shadow tones, etc., but, at the same time, makes it difficult to duplicate a given result.

The one pigment printing process which has attained considerable commercial importance is *Carbro*, a method possessing all the tone rendering advantages of carbon printing without its slow speed. In Carbro work the hardening of the gelatin results from a chemical reaction between the sensitizer (sometimes called "bleach") and the silver of a photographic bromide emulsion. Carbon printing requires only a dichromate sensitizer, whereas Carbro requires, in addition, other chemicals in order to activate the silver for its selective hardening action. Although a variety of "bleaches" can be used, the normal Carbro sensitizer is an acid solution composed of potassium ferricyanide, potassium bromide and potassium dichromate. As in the straight dichromate-gelatin processes the actual mechanism of the chemical reaction responsible for the gelatin hardening is still somewhat obscure.

The fundamental reactions of Carbro printing seem to proceed as follows. When the sensitized tissue is placed in intimate contact with the wet bromide paper the sensitizer migrates from the tissue into the surface of the bromide print. Here the silver image is bleached by the ferricyanide in conjunction with the potassium bromide with formation of potassium ferrocyanide. The amount of ferrocyanide formed is proportional to the silver present in the print. When the ferrocyanide diffuses back into the tissue it is there re-oxidized to potassium ferricyanide by the dichromate which itself undergoes reduction to lower chromium oxides. These combined reactions result in local insolubilization of the pigmented gelatin in the tissue.

Anyone making Carbro prints needs to remember that the entire process depends upon a number of complex and simultaneous chemical reactions. The slightest contamination by foreign chemicals will disturb the delicate equilibrium of the sequence and introduce difficulties. Troubles which may be small and relatively unimportant in monochrome printing can be most detrimental in tricolor work. As the danger of chemical contamination is present wherever photographic work is done, it is essential to remember that meticulous cleanliness is the foremost prerequisite for successful Carbro printing.

In practice, Carbro work is similar to carbon printing with the exception that the sensitized tissue, rather than being dried and printed under a negative, is squeegeed into contact with a bromide print while still wet. The transfer and development are carried out in much the same manner as with carbon. Obviously, the quality of a Carbro print is governed by that of the bromide print from which it is made. It follows that a sound knowledge of black and white printing is particularly essential for tricolor Carbro. The choice of bromide papers for Carbro is limited as only papers without the conventional antiabrasion surface coating are suitable for first class work.

For monochrome work there are mainly two working methods available. In the direct (or non-transfer) method the tissue is developed directly on the bromide print which serves as the final support. The bleached silver image may be either fixed out or partially, or wholly, redeveloped.

In the transfer method the tissue is stripped from the bromide print and transferred to another paper support for developing. It is also possible to employ a double transfer method, in which the tissue is stripped from the print and transferred to a plastic support for development. When the pigment image dries on its plastic support it is removed with a soluble gelatin paper from which it is transferred to the final support. This latter method is used in tricolor Carbro work to secure proper registration.

The accepted technique for producing tricolor Carbro prints is as follows. A set of balanced bromide prints (generally enlargements) is made from the three separation negatives—a cyan print from the red filter negative, a magenta print from the green filter negative, and a yellow print from the blue filter negative. Three sheets of carbro

tissue (cyan, magenta and yellow), either on their original paper supports or, as in a recent modification, stripped and adhered to a plastic support, are sensitized and combined with their respective bromide prints. When bleaching is complete the bromide prints are stripped off and the tissue squeegeed to a plastic support, which, incidentally, needs no waxing, polishing, etc., and are then developed in hot water. The plastic sheets then carry three duplicate images of the bromide prints in cyan, magenta and yellow.

The next step transfers these pigment images, in register, to a paper support. This is accomplished by soaking a sheet of soluble support paper in cold water and squeegeeing it to the plastic bearing the cyan image. On drying, the image adheres to the paper rather than to the plastic. The paper with its cyan image is, in like manner, squeegeed to the plastic containing the magenta image. While still wet the two images are slid into exact registration and the paper when dry holds the combined cyan-magenta image. In the same way, the yellow image is superimposed over the previously combined images.

The final step consists of transfering the three-color image from its soluble support to the final support paper which, again, involves soaking, squeegeeing, dissolving the remaining soluble gelatin in hot water and drying.

The two manufacturers of Carbro materials, McGraw Colorgraph Co., in Burbank, California and Autotype Co. in London, have issued complete and specific instructions for printers using their respective Carbro tissues.

An interesting modification of the tricolor Carbro process is the *Vivex* process, used and patented by Colour Photographers Ltd., London. This method was used for several years prior to the second World War for making reasonably priced tricolor prints on a rather large scale. The chief difference here was the use of cellophane as support for the individual pigment images. After development the cellophane layers were registered and transferred to a final support.

The *Duxochrome* process was also of some importance in Europe. This method utilized a silver bromide emulsion on strip film. The emulsion contained water-insoluble pigments (cyan, magenta and yellow). Exposure was made through the back of the material from separation negatives. After developing in a tanning developer, followed by hot water treatment, the three reliefs were transferred, in register, to a final support. Subsequently the pigments were replaced by water soluble, non-diffusing azo dyes.

In summary, we have considered, among scores of possible methods, the most valuable pigment processes for securing three-color prints: Carbon, Belcolor, Carbro and Vivex, gum printing and Duxochrome. It is of interest to note, also, that the principles of carbon printing are widely employed outside the pigment printing industry in two popular photomechanical methods, silkscreen and rotogravure printing.

Pigment printing processes in which the initial image is also formed by the dichromate-gelatin reaction, but in which the pigment is laid on by hand, are in principle and practice similar to the methods just discussed. Two basic procedures in this category are the *oil pigment* and *bromoil* methods, corresponding respectively to carbon and Carbro.

In the oil pigment process gelatin coated paper (usually an undeveloped bromide paper fixed in plain hypo) is dichromate-sensitized, dried and exposed under a negative. It is then washed to remove excess sensitizer and to swell the gelatin layer in proportion to the exposure. Where there was little or no exposure to light (in the highlights) the tanning is negligible and the swelling, considerable; in the shadow areas the situation is reversed. To form the image the gelatin relief is then daubed with an oily pigmented ink which clings to the tanned portions but is repelled by the swollen gelatin. By varying the concentration of the ink and the action of the brush a considerable amount of control can be exercised. It is also possible to transfer an ink image from the original print to another paper, or any reasonably absorbent surface.

While the oil process is a contact medium requiring a strong printing light, the bromoil process makes it possible to produce large prints without the necessity of an enlarged negative. In bromoil work a bromide print is bleached with a special bleach similar to a Carbro bleach which hardens the gelatin of the print in proportion to the amount of silver present. Thereafter, the process is essentially the same as oil pigment printing.

A commercial modification of oil pigment printing is the "Photo-gelatin" or Collotype process, a photomechanical printing method which does not require the breaking up of continuous tones into dots. A plate of glass, zinc or aluminum is coated with two layers of gelatin, the first serving as a sub-stratum while the top layer, containing dichromate, acts as the image former. The gelatin coatings are dried in specially constructed ovens under closely controlled temperature and humidity. After exposure under a reversed negative the plate is developed in water where the top layer of gelatin reticulates because, being tanned, this surface gelatin resists the expansion of the soft gelatin below. The reticulation grain is much more delicate than a fine photoengraving screen and thus eliminates the sharp distinction between inked and non-inked sections characteristic of lithography. After drying and re-swelling in a dilute glycerin solution the plate is inked and ready for printing.

Modern Collotype printing is done by rotary presses, having an automatic inking mechanism, at approximately 4000 impressions a day. One plate will produce 20,000 to 25,000 impressions. The process, although cumbersome and difficult to control, is capable of producing strikingly beautiful, full color, screenless reproductions of art masterpieces.

Working Hints for Pigment Printers

The pigment printing processes discussed above are those most prominent in and most representative of the entire field. Obviously, the fundamental reactions involved can be varied and combined into countless modifications.

To those actually engaged in producing color prints by pigment processes, the author offers a word of caution. By no means attempt to get results with all, or several, of these techniques. Choose the method best suited to your temperament, available time, equipment and general laboratory facilities. Pursue this method, using consistently one brand of chemicals and materials, to eliminate as many variables as possible, and trust the manufacturers' recommendations. Only by patient work, under controlled conditions and with careful, intelligent observation is it possible to achieve with any one pigment printing process consistently perfect results.